Ashburnham Industrial Land Use Suitability Analysis and Assessment

Fall 2006 Final Report

John Hersey
Nathaniel Malloy

Studios: LA 609/RP 681
Department of Landscape Architecture and Regional Planning
University of Massachusetts - Amherst

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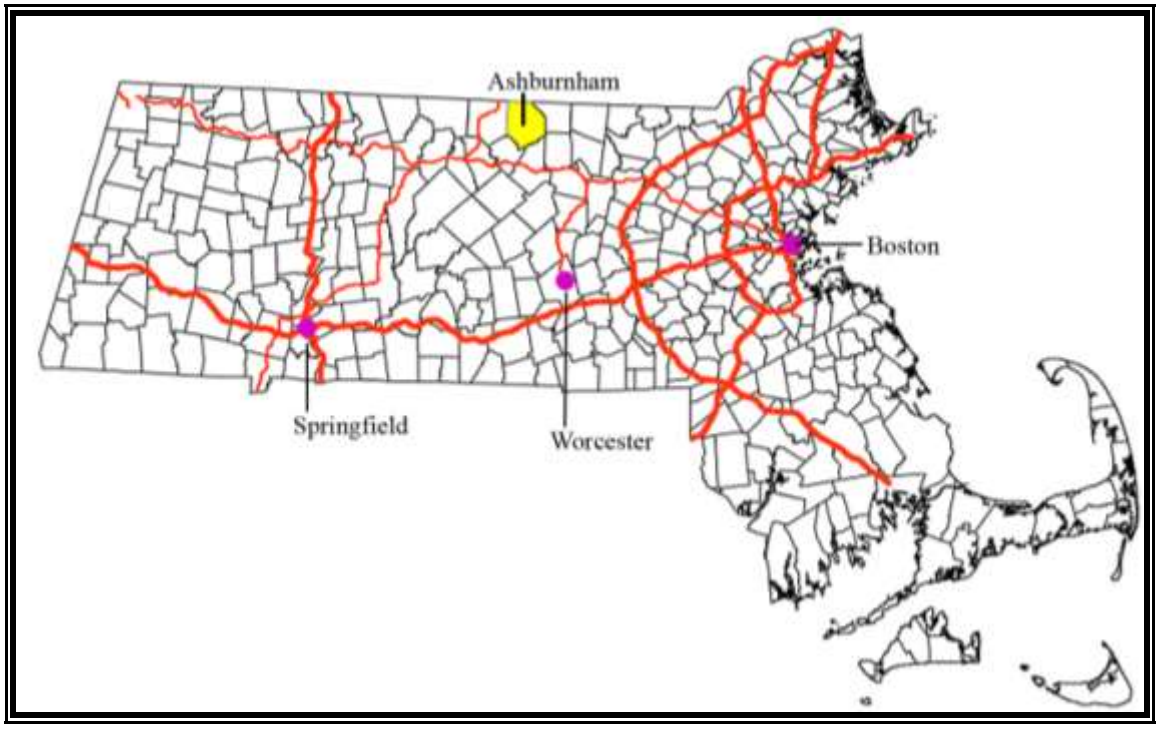
Section I. Introduction

This industrial land use suitability assessment was performed at the request of the Town of Ashburnham Planning Board. The Planning Board expressed a need to enhance the tax base and employment opportunities. Given the existing Industrial zoning, the town has potential for approximately 17.5 million square feet of floor area of industrial development. However, as will be discussed in later sections of this report, there are many constraints limiting this development. The first stage of our suitability assessment process was to look at the existing industrially zoned parcels, half of which were zoned in the 1970s, to determine if these sites are indeed suitable for industrial development.

- Town Description

Ashburnham, Massachusetts (See *Figure 1* for Site Locus Map), is a quintessential New England town nestled in the hills and lakes of northern Worcester County; it is located an hour west of Boston and thirty minutes north of Worcester, Massachusetts. This idyllic town carefully balances its abundant natural resources with a strong industrial past that has transformed into a small but stable manufacturing and service economy.

Figure 1: Site Locus Map



The scenic hiking trails and over 20 lakes which can be found in Ashburnham make this area a seasonal destination. During the summer months, the town's population spikes from approximately 5,000 year-round residents to 10,000 part-time residents. The town's people are proud of its heritage as a vacation site, and are equally proud of its manufacturing past. Chair manufacturing dominated the area in the early 20th century, exploiting the abundance of local

forests, hydro-power, and the regional railway which continues to connect the town to local cities. Today, manufacturing represents approximately a quarter of Ashburnham's civilian employment. However, the prestigious Cushing Academy, a private boarding high school located in Ashburnham is the town's largest employer.

The proximity of Ashburnham to Boston, Worcester and Fitchburg increases its desirability as a place to live. During the 1980's the town's population grew by almost 35% as people moved to the area for its moderate tax rates, good school systems, and natural scenery. Ashburnham is a short drive from Route 2, which runs the length of northern Massachusetts, and Interstate 190, which connects to Worcester. The Springfield Terminal Railway line (former Boston & Maine RR), which serves central and western Massachusetts, runs through South Ashburnham Center. Ashburnham's inter-modal connectivity and extensive open spaces warrants an industrial land suitability assessment.

- Project Background

Ashburnham has three major areas within the town that are currently zoned for industrial purposes. However, according to the Town Planner, there are substantial physical and environmental constraints that make developing these parcels non-feasible. Some of these constraints include the presence of wetlands, lack of available infrastructure, and accessibility issues.

The majority of the town's tax revenue is from residential uses. Although Ashburnham did experience moderate growth in the 1980's, its current population of approximately 5,700 residents does not generate enough tax revenue to meet the town's financial demands. Due to these budgetary struggles, the town hopes to increase tax income from non-residential uses, such as industrial or commercial-based uses. For instance, the town's Focus Committee helped create a "Green-Business" Zone in the northeast part of Ashburnham. However, there are no existing or currently planned water or sewer services in this location, limiting its development potential.

In 2004, the Montachusett Regional Planning Commission (MRPC) prepared a Community Development Plan that included an Economic Development component. The plan made recommendations, but did not complete a detailed analysis of the usefulness of existing industrial and commercial zones. In addition, the Plan did not include parcel level analysis.

During a 2004-2005 study the currently inactive Industrial Development Commission (IDC) identified a dozen areas to be considered for development within the Town. The IDC concluded that the primary demand for industrial land in Ashburnham would come from small tenants needing 1,000 to 2,000 square feet of space to users needing a maximum of 30,000 square feet. The types of users were identified to range from small landscaping or contractor types of business to light manufacturing.

Based upon the previous studies and reports, the Town Planner has identified a need to study existing zoning districts by analyzing parcel-level data. The Town Planner requested an Industrial Land Use Suitability Analysis that will include such a parcel-level assessment.

- Project Goal and Objectives

The goal of this study is to identify, classify, and rank the most suitable sites for industrial use in Ashburnham, Massachusetts. This project is considered to be a pilot study for a more detailed assessment by others that would include in-depth environmental studies, brownfield remediation and market forecasting. The current proposed study included meetings with members of the town Planning Board to learn about their preferences for the industrial development in Ashburnham. The objectives of this study are:

- Review all existing industrially zoned land (at the parcel level) that includes current uses, environmental constraints, access limitations, existing infrastructure, and total remaining useable capacity.
- Review any existing and previously used industrial sites that may be suitable for reuse and analysis of brownfield remediation issues.
- An analysis of current industrial land use and projected demand in Northern Worcester County and the Montachusetts Regional Planning region to identify which new industrial land uses are most probable.

- State Trends in Employment and Industry

The UMass team reviewed the state trends as summarized by the MRPC. Services industries are projected to generate more than four out the five (83%) new wage and salary jobs in Massachusetts. As a result of rapid growth in technology-driven services, demand for professional and technical workers should expand the fastest of all workers and generate the most new jobs. Jobs for less skilled workers will grow at a slower pace. Of the 25 occupations growing the fastest, more than half are related to information technology or health care. The need for workers who are educated and highly skilled will grow as technology and health care become an increased focus in the state of Massachusetts. For this reason, jobs for more highly skilled workers should increase the fastest of all. Of the 345,000 projected new jobs generated in the economy over the next 10 years, about half will require a bachelor's degree or higher.

Retirements and other replacement needs will account for 70 percent of the more than 1.1 million projected job openings through 2008. Some industries like information technology will grow rapidly and add large numbers, while others, particularly those in *manufacturing, will continue to decline, but at much slower rates*. These state trends contradict the possibilities of industrial development in Ashburnham, however, they do not exclude them. If Ashburnham attract the health care/biotech sector they could tap into the state trends in employment and industry. The natural assets of Ashburnham would be attractive to highly skilled/educated professionals.

- Employment by SIC

Ashburnham is one of twenty-two (22) towns within the Montachusett Planning Region which includes northern Worcester County. Within this region, businesses (as categorized by SIC code) with the highest number and concentration include Services (31.3%), Retail Trade (16.3%), Construction (10.5%), Finance, Insurance and Real Estate (6.3%), and Manufacturing (6.1%). Ashburnham reflects the regional employment trends with the majority of their

businesses categorized as Service & Administrative and Construction. The concentration of manufacturing jobs within Ashburnham (5.5%) also aligns with regional trends in which approximately 6.1% of employment is considered manufacturing.

A more detailed examination of the businesses in Ashburnham reveals that there are approximately 165 businesses in town. Businesses with the highest number and concentration in Ashburnham include Services (28.5%), Construction (17%), Retail Trade (12.7%) Public Administration (6.7%) and Agriculture, Forestry and Fishing (6.1%). It should be noted that Ashburnham has a higher concentration of establishments in Construction (17.0%) than compared with the Montachusett Region (10.5%), and a lower concentration of Services and Retail Trade when compared with the region.

Table 1: Employment by SIC Code for Ashburnham and the Montachusett Region

Community	Year	Agric, Forest, Fish	Mining	Const	Mfg	Trans, Com, Util.	Whlsl & Retail	Finance, Insurance, Real Estate	Services, Public Admin.	Total	% of Total
Ashburnham	**1990**	**25**	**0**	**124**	**766**	**96**	**508**	**210**	**994**	**2,723**	**2.59**
	2000	**8**	**7**	**216**	**601**	**46**	**343**	**113**	**1,506**	**2,840**	**2.65**
Total for Montachusett Region	*1990*	*1,152*	*68*	*5,790*	*30,918*	*5,062*	*21,282*	*4,780*	*36,160*	*105,212*	
	2000	*544*	*30*	*6,364*	*26,209*	*3,616*	*16,114*	*5,346*	*49,004*	*107,227*	

*Source: U. S. Census, 1990 and 2000

Table 2: Employment and Wages by NAICS Code for 2004 in the Fitchburg-Leominster Area

Description	# of Establishments	% of Establishments	# of Employees	Average Weekly Wages
Goods-Producing Domain	793	22%	12,116	$871
Natural Resources and Mining	22	1%	153	$550
Construction	477	13%	2,567	$810
Manufacturing	294	8%	9,396	$893
Service-Providing Domain	2,808	78%	38,895	$595
Trade, Transportation and Utilities	793	22%	11,317	$524
Information	40	1%	679	$701
Financial Activities	282	8%	1,831	$765
Professional and Business Services	439	12%	3,488	$627
Education and Health Services	398	11%	13,190	$713
Leisure and Hospitality	333	9%	4,791	$263
Other Services	447	12%	1,752	$419
Public Administration	76	2%	1,847	$908
Total, All Industries	**3,601**	100%	**51,011**	**$663**

- ***Workforce Drive Times***

There are 2,820 persons in Ashburnham that are 16 years and older and are considered eligible for employment. A large percentage of Ashburnham's working-age residents, approximately 88.3%, drove alone to work in 2000. The average commuting time for an Ashburnham resident (31.4 minutes) exceeded the Montachusett Region (29.1 minutes), State (27.0 minutes) and National (25.5 minutes) averages for a one way trip.

Table 3: Number of Working Age Persons Traveling to Work

	Number Persons Traveling to Work	% Persons Traveling to Work in Ashburnham	% Persons Traveling to Work in Massachusetts
Car, truck, or van--drove alone	2490	88.30%	82.90%
Car, truck, or van-carpooled	226	8.00%	6.00%
Public Transportation (including taxicab)	23	0.80%	8.70%
Walked	17	0.60%	4.30%
Other Means	8	0.30%	0.30%
Worked at home	56	2.00%	3.10%

Table 4: Average Travel Time to Work

	Ashburnham	Massachusetts	United States
Average travel time to work (minutes)	31	27	26
Average travel time to work using public transportation	116	44	48
Average travel time to work using other transportation	31	25	24

- ***Regional Industrial Park Overview***

The Montachusett Region is zoned predominantly low density residential, with the majority of industrial zoned lands occurring along Rte. 2 (runs East-West) and Interstate 190 (runs North-South and connects to Worcester). An important trend to note is that the majority of Ashburnham's industrial zoned lands are adjacent to industrial zoned lands in both Gardner and Winchendon, to the south and west, respectively. The proximity of these areas may offer an opportunity for collaborative efforts between the towns when developing these sites.

Although there is an abundance of land zoned for industrial use within the Montachusett Region, especially along the Route 2 corridor and along Route 190, the amount of land currently used for industrial purposes is much smaller than the amount of land zoned industrial, as seen in *Figures 2* and *3* below.

Figure 2: Montachusett Region: Existing Zoning

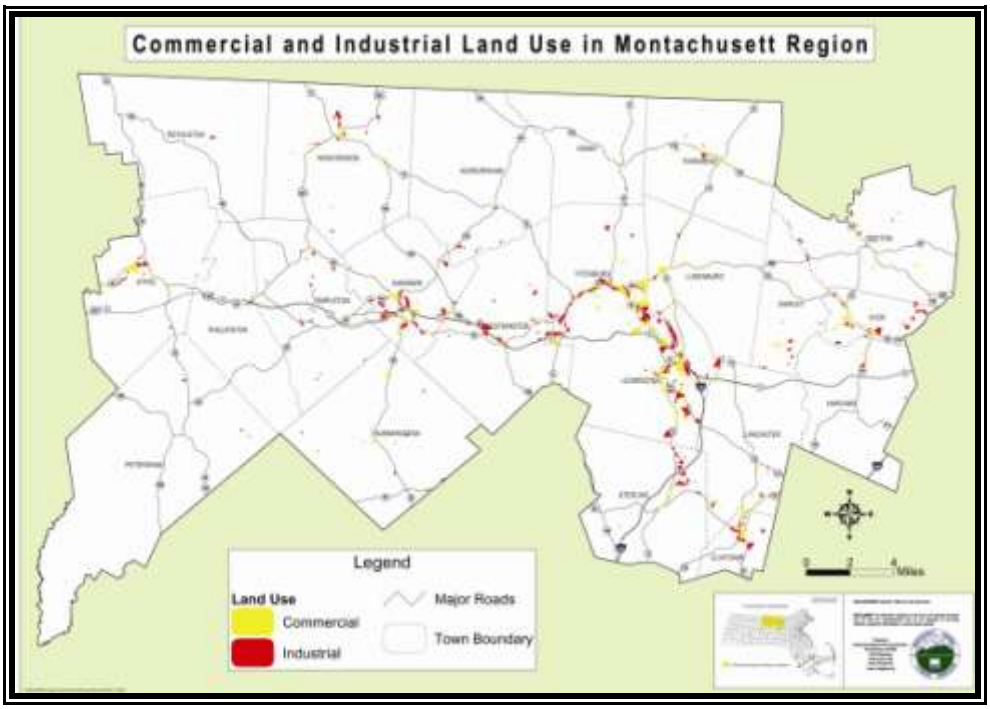
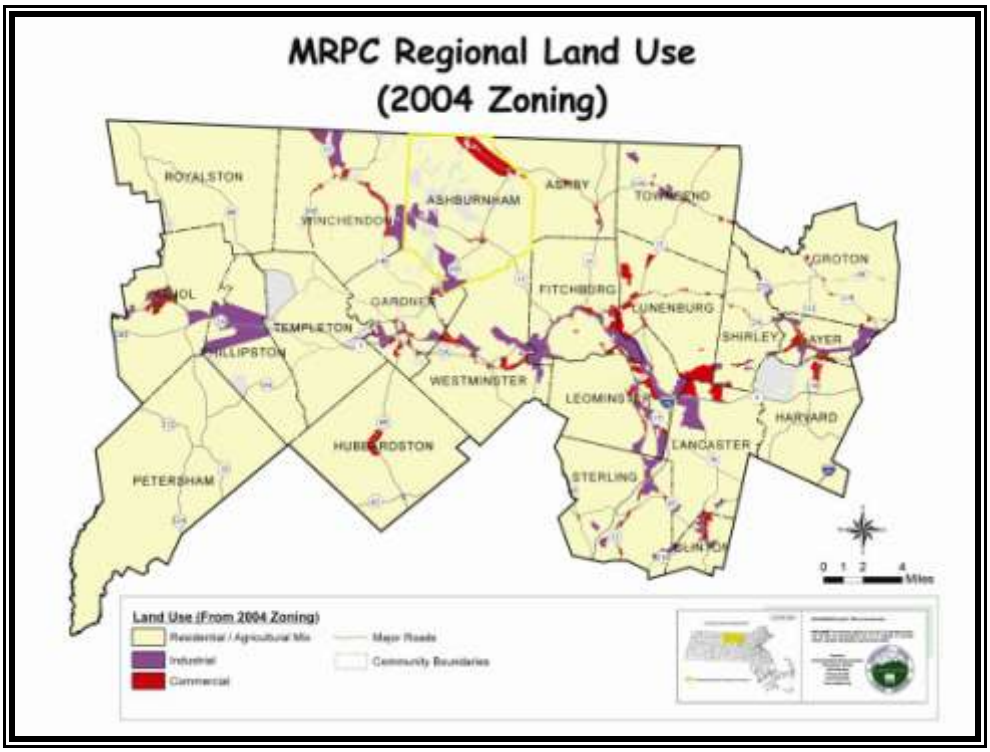


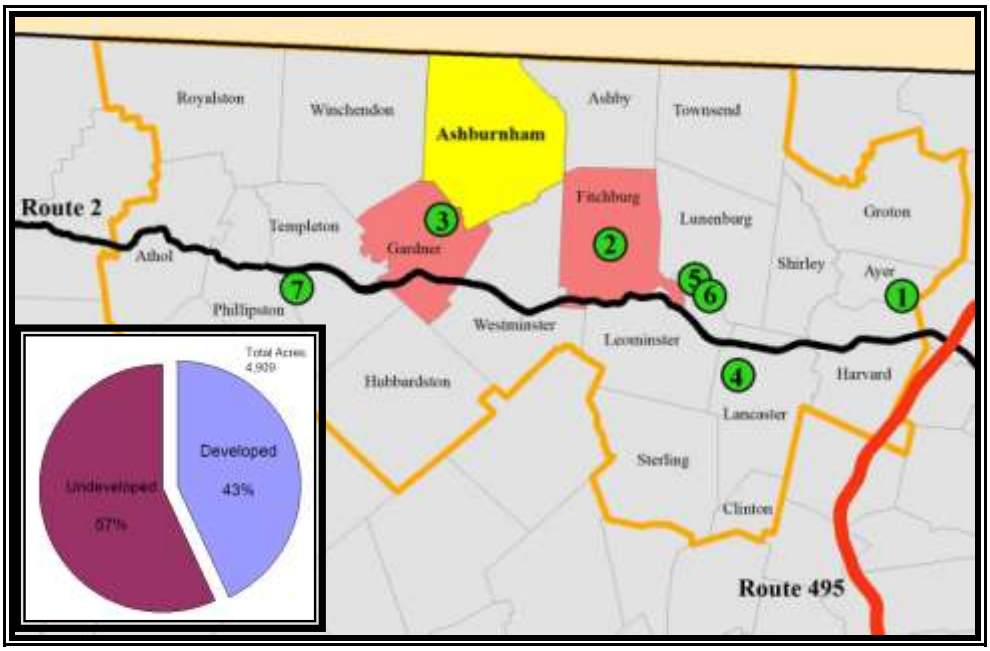
Figure 3: Montachusett Region: Commercial and Industrial Land Use



The cities of Fitchburg, Gardner, and Leominster have a strong industrial presence and appear to be the focal areas for industry. The implication from the amount of unused industrially zoned land within the region is that these towns should assess their current zoning policies and examine the potential growth of future industrial uses. For instance, a study conducted by CB Richard Ellis in 2006 noted that there are vacancies within industrial parks in the Interstate Route 495 belt that are currently more sought after than developable lands located further west. However, the study did suggest that there is a possibility of industries moving west for economic reasons.

Currently there are 7 active industrial parks in the Montachusett Region according to the Massachusetts Alliance for Economic Development. The Montachusett Region has many characteristics that make it attractive for industrial development. Its proximity to Interstate Route 495 connects the region to a major interstate highway. The Worcester Airport and Boston's Logan International Airport are approximately an hour and 1 ¼ hour drive, respectfully, from Ashburnham (centered in the region). The price and availability of land in the region are also characteristics that make it desirable when compared to areas within Route 495 where large, undeveloped parcels are scarce and more expensive. While the cost of an acre in the I-495 belt would cost approximately $110,000, an acre in North Central Worcester County would cost about $65,000.

Figure 4: Montachusett Region: Existing Industrial Parks



The seven industrial parks in the region are located along Route 2, the major East-West Corridor that connects the area to major highways and cities. Town Planners within this region explained that a major draw for industries and a key to their success was not only access to Route 2 but also the site's visibility from this major transportation route. The major industries within these parks are light manufacturing and limited commercial. *Table 4* provides a detailed description of the parks, including town location, total gross area, available acreage, and major tenants. The total amount of acreage within these seven parks is 4,909 acres with the Fort Devens Industrial Park

representing approximately 90% of this acreage. However, the amount of available acreage is approximately 2,789 acres, representing 57% of the total area. These figures suggest a waning demand within this region for industrial uses.

Table 5: Montachusett Region: Statistics for Existing Industrial Parks

Number on Map (Fig. 4)	Industrial Park	City/ Town	Total Gross Acreage	Available Acres	Maximum Build-out (Sq. Ft.)	% Built-out	Major Tenants
1	Fort Devens	Ayer	4,400	2,490	8,500,000	65%	Gillette Co., Pharm-Eco Labs, Bionostics, American Superconductor, Parker Hannifin/Nichols Aircraft, Integra, Learning Express, Anheuser Busch, Southern Container
2	Montachusett Industrial Park	Fitchburg	30	0	20,000	50%	Minuteman Co., Recycle America
3	Summit Industrial Park	Gardner	125	35	750,000	75%	F.E. Inc., Advanced Cable Ties, Woods Equipment Co.,GSH Intergrated Systems, Blessington Construction, Inc, and New England Peptide.
4	Lancaster Technology Park	Lancaster	130	40	900,000	70%	Lancaster Golf Center
5	Orangewood Industrial Park	Leominster	16	16	250,000	0%	
6	Orchard Hill Park*	Leominster	120	120	600,000	0%	Target, Kohls, Dicks, Bed Bath & Beyond
7	Baldwinville Industrial Park	Templeton	88	88		0%	

*Orchard Hill Park, while zoned industrial has all retail tenants to date.

Section II. Methodology

- Phase One: Develop Land Assessment Criteria and Identify Industry Trends

1. Literature Review: Research existing sustainable industrial park developments, assessment studies and methodologies from government agencies and other similar institutions, as well as scholarly publications. Review literature on such sites as Fort Devens Industrial Park, Toronto Port Lands Redevelopment, and Londonderry Eco-Industrial Park in New Hampshire.
2. Data Collection: Gather demand and trend data for industrial land use in the region as well as socio-economic data from the Montachusett Regional Planning Commission (MRPC) and other government institutions. Research town trends as identified in the Community Development Plan. Other sources of data:
    A. Executive Order 418 Community Development Plan for Ashburnham
    B. 2005-06 Economic Development plan prepared by MRPC
    C. Massachusetts Department of Economic Development
    D. Executive Office of Environmental Affairs (Build Out Analysis)
    E. 2000 U.S. Census Bureau
    F. Massachusetts Department of Unemployment Assistance
    G. 2005-06 Northeast Industrial Park Directory
3. Mapping: Research community Buildout Analysis and associated data, industrially zoned lands in northern Worcester County and town-wide data from MassGIS. The mapping element used only existing GIS data and does not propose to generate new digital data.
4. Land Assessment Methodology: Summarize industrial land assessment methodology supported by review of existing studies and research. The final method may be modified based upon subsequent meetings with the client and stakeholder groups.

- Phase Two: Analysis of Northern Worcester County and Ashburnham

1. Document Existing Industrial Parks: Through the use of information gathered from regional planning agencies, industrial parks within northern Worcester County will be compared and analyzed.
2. Individual Parcel Analysis: Parcel specific analysis in Ashburnham using the land assessment criteria developed in Phase One. The upshot will be identification and ranking of potential parcels in town. This scope of this project does not include digitizing existing parcel information.

- Phase Three: Land Assessment and Valuation

1. Determine parcel specific study areas: An in-depth site assessment and analysis of the current industrially zoned lands. The assessment will build on the case study research, land assessment criteria and detailed maps that show slope, infrastructure, environmental issues and absolute building constraints.

The research and mapping identified general site assessment criteria which were used to assess the industrial sites. The criteria will be discussed in more detail in the next section of the report.

The criteria was determined through case study research, examining regional and state planning documents, Mass GIS data layers, interviews with staff, and interviews with town planners within the Montachusett Region.

After the criteria were identified and the industrial zones assessed, a comparative table was created that showed the advantages and disadvantages of each site (Please see *Table 6* for an example of this chart). Although the criteria show a general feasibility of developing of each site, it must be emphasized that just one criteria could make the entire site undevelopable, such as large amounts of wetlands along the site's only road frontage. The charts are therefore simplifications used to make developers and the town aware of any issues that may restrict future development.

The advantages/ disadvantages chart and the detailed parcel assessment informed a summary for each industrial zone. The summary highlights the prominent advantages and disadvantages to development and makes recommendations if each site were to be developed as an industrial park. Although these recommendations are site specific, this report helps identify further studies that would need to be conducted if each site were actually developed.

Table 6: Example of Comparative Chart for Individual Industrial Zones

ADVANTAGES		DISADVANTAGES	
One parcel or 1 owner of multiple parcels		Multiple parcels or Multiple Owners	
Site size: > 50 Acres		Site size: < 50 Acres	
Adjacency to Existing Residential Uses		Not adjacent to Existing Residential uses	
Site Topography: minimal slopes		Site Topography: numerous slopes	
Municipal Water lines adjacent to site		Municipal water lines NOT adjacent to site	
Sanitary Sewer lines adjacent to site		Sanitary Sewer NOT lines adjacent to site	
Re-use of industrial or disturbed site		NOT a Re-use of industrial or disturbed site	
Less than 25% of site designated as protected habitat		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2		Greater than 2 miles to Route 2	
Less than 10 % site in 100 ft River Buffer		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands		Greater than 10% of site in NWI Wetlands	
Less than 10% of site in Conservation (Permanent Protection)		Greater than 10% of site in Conservation (Permanent Protection)	

Section III. Assessment Criteria

To establish criteria for our assessment, we interviewed local and regional planners as well as researched documents such as the Urban Land Institute (ULI) Industrial Development Handbook. The set of criteria are used to show developers a general assessment of the site and if there are any salient disadvantages that could restrict development. Although the criteria show a general feasibility of developing of each site, it must be emphasized that just one criterion could make the entire site undevelopable, such as large amounts of wetlands along the site's only road frontage.

We rated each site based on these four general categories:

General	***Environmental***	***Infrastructure***	***Transportation***
- Reuse	- River Buffers	- Water System	- Highway
- Zoning	- Floodplains	- Sewer System	- Rail lines
- Abutting uses	- Wetlands	- Internet	
- Parcel size	- Wildlife habitat	- Natural Gas	
- Parcel owners	- Aquifer Areas		
- Topography	- Vernal Pools		
	- Soils/Drainage		

- General

Through GIS mapping tools, for the general assessment we looked at current zoning and land use to determine physical and legal constraints of development (See *Figures 2 and 3*).

Land Use Definitions

- The *LI-A and LI-B Light Industrial* districts shall include light manufacturing, retail, business, and office as allowed in the Schedule of Use Regulations. The purpose of this district is to provide areas for industrial and commercial uses in an open setting that will not have objectionable influences on adjacent residential and commercial districts and are not dangerous by reason of fire or explosion, nor injurious or detrimental to the neighborhood by reason of dust, odor, fumes, wastes, smoke, glare, noise, vibration or other noxious or objectionable feature as measured at the nearest property line.

- The *Green Business* is intended to foster businesses that will support tourism and passive and outdoor recreation while preserving the natural beauty and ecological significance of the area.

- The *Village Center* is intended to foster appropriate reuse of existing structures and new construction within the downtown area in harmony with the historic character and dense development pattern of the downtown.

- The *Water Supply Protection District* is an overlay district encompassing all lands within the Town of Ashburnham, lying within the watershed of the Upper Naukeag Lake Reservoir, which now provides public water supply. This overlay district is superimposed on the zoning

districts and shall apply to all new construction, reconstruction, or expansion of existing buildings and/or expanded uses. Applicable activities or uses which fall within the Water Supply Protection District must comply with the requirements of this district as well as with the underlying zoning. All regulations of the Town of Ashburnham Zoning By-Laws shall remain in effect.

- *Chapter 61* is the forest land classification program under Massachusetts General Laws. It is designed to encourage the preservation and enhancement of forests. It offers significant local tax benefits to property owners willing to make a long-term commitment to forestry. In exchange for these benefits, the city or town in which the land is located is given the right to recover some of the tax benefits afforded the owner when the land is removed from classification and an option to purchase the property should the land be sold or used for non forestry uses.

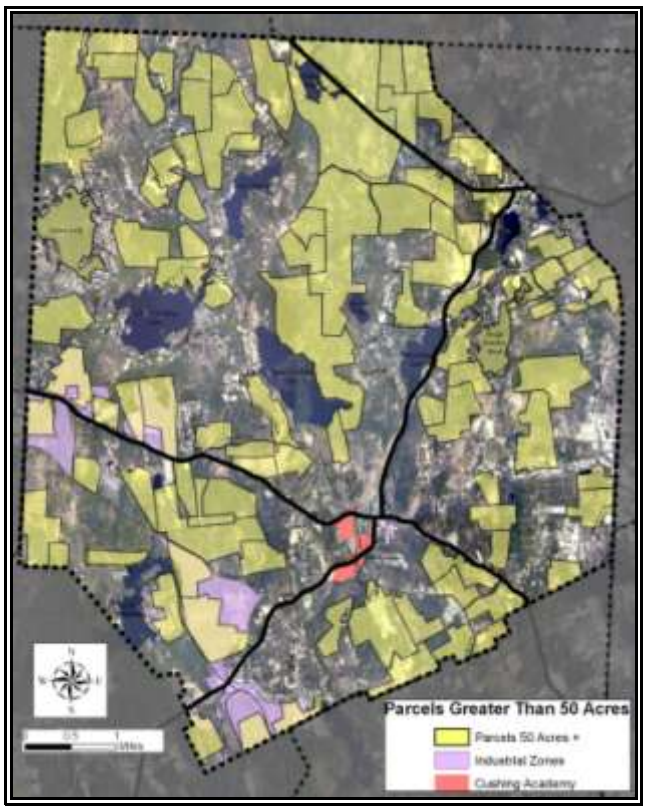
    - *Chapter 61A* is the agricultural and horticultural land classification program under Massachusetts General Laws. Chapter 61A is designed to encourage the preservation of valuable farmland and promote active agricultural and horticultural land use. It offers significant local tax benefits to property owners willing to make a long-term commitment to farming. In exchange for these benefits, the city or town in which the land is located is given the right to recover some of the tax benefits afforded the owner and an option to purchase the property should the land be sold or used for any purpose other than to continue raising farm products.

    - *Chapter 61B* is the recreational land classification program under Massachusetts General Laws. It is designed to encourage the preservation of the Commonwealth's open space and promote recreational land uses.

    - The assessment indicates that there is significant amount of state owned land as well Ch. 61 land throughout the town. As part of the assessment, our group did not consider the Chapter 61 land to be a limiting factor; however, the presence of this much conservation land illustrates that the town is conservation minded. The existing industrial and commercial use for the town is concentrated in the South Ashburnham and town center. Existing industrial uses include chair manufacturing, oil distribution, and feed distribution.

Figure 6 illustrates the undeveloped parcels over 50 acres in size. The ULI indicates that 50 acres is a desirable size for industrial parks because it allows ample space for future expansion and it provides economies of scale when adding infrastructure such as utility lines and road construction. Land owned by Cushing Academy can be seen on this map at edge of the Village Center. Cushing is the largest employer in town, however, there is no tax base provided to the town. The Cushing land ownership limits town center growth to the south along Route 101.

Figure 6: Ashburnham's Undeveloped Parcels over 50 Acres



Reuse

Within the zones currently zoned industrial, unless unforeseen hazards exist, it would be cost beneficial for developers to reuse land that has been previous developed for industrial uses.

Zoning

It is important for industrial development that potential lands are zoned for industrial use prior to plans to build an industrial park. Existing industrial zones were assessed so these areas meet this criterion. However, areas that are not currently zoned industrial have been assessed and where the development potential is noteworthy, the town of Ashburnham may wish to consider rezoning these areas to attract future development. If a developer approaches the town with plans to develop an area that is not zoned industrial, the lengthy process of trying to change the zoning may deter the plans from implementation. In Ashburnham, however, certain uses are allowed within the residential zones that are not typical of most towns. For instance, uses allowed by-right within the residential zones include: professional office or studio and commercial greenhouses. Uses allowed by Special Permit within these zones include: scientific research & development; some light industrial (research & development); and storage of construction equipment and building material.

Abutting Uses

The areas assessed in town range from isolated zones separated from residential uses by vegetation and topography and areas which are in close proximity to residential and commercial uses. The adjacency of non-industrial uses was examined due to the required buffers needed to separate industrial uses from residential uses; a significant width of land that could deter industrial development on smaller parcels.

Parcel Size

The zones currently zoned industrial overlay many parcels as do potential areas that are not currently zoned industrial. Nonetheless, an important site characteristic according to the Urban Land Institute is for a site to include parcels under common ownership or single parcels of at least 50-100 acres. This size is important to allow for future expansion and economies of scale. It is also important in a town with limited sewage capacity when potential users consider the land area needed for on-site waste water treatment. Larger parcels will also make more efficient use of infrastructure such as roads, utility lines and public water supply.

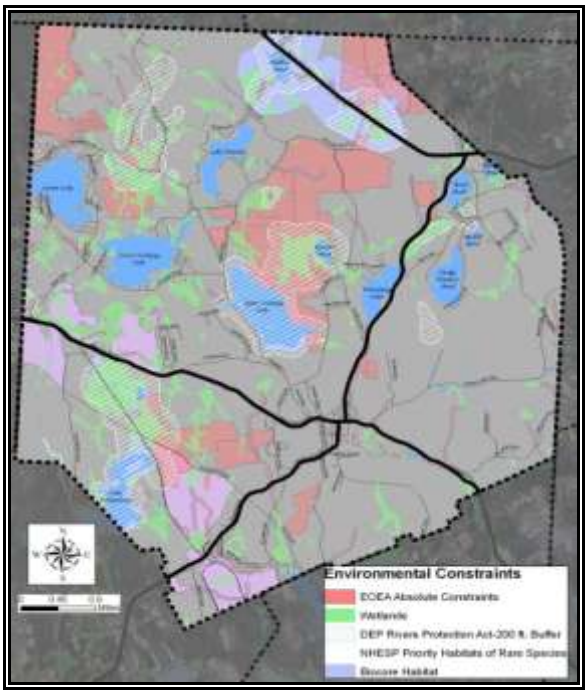
Topography

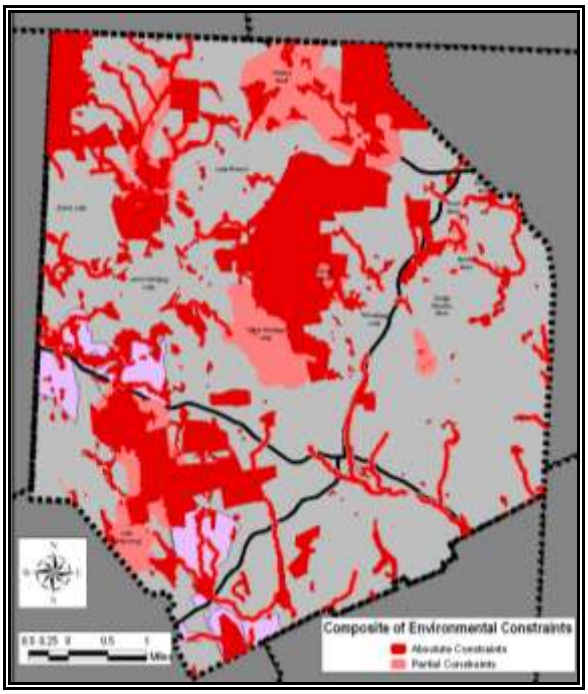
Ashburnham is a hilly town with many areas that have a steep slope (greater than 15%), which can be cost prohibitive for developers. Although the presence of steep slopes alone will not determine the development potential of a site, the combination of steep slopes and shallow soils on top of bedrock could influence the type of industrial development suitable for the site.

- Environmental

Environmental constraints were assessed through a review of analog maps as well as through GIS mapping (*Figure 7*). It is important to look at the environmental constraints to assess storm water drainage and runoff, erosion and sediment control, and grading as well as environmental impacts such as destruction of habitat. Looking at these criteria will determine if permitting is required as well as determine the impact to development costs.

Figure 7: Ashburnham: Environmental Constraints and Composite Environmental Constraints





Definitions

- *Natural Heritage and Endangered Species (NHES) Priority Species Habitat*: Priority Habitat is the mapped geographical extent of known habitat for all state-listed rare species, both plants and animals. Habitat alteration within Priority Habitats may result in a "take" of a state-listed species, and is subject to regulatory review by the Natural Heritage & Endangered Species Program.

- *BioCore:* Depicts the most viable habitat for rare species and natural communities

- *Executive Office of Environmental Affairs (EOEA) Absolute Building Constraints:* lands that cannot be developed because they are either under a conservation restriction or are owned outright.

- *Department of Environmental Protection (DEP) River Buffers*: Development of land within these areas is limited or prohibited, and is subject to the regulations of the Massachusetts River Protection Act.

- *Soil Types:* as defined by the United States Department of Agriculture
  - 282e COLTON GRAVELY LOAMY SAND, 25 TO 35 PERCENT SLOPES: Soil is excessively drained; water is removed very rapidly. Depth to bedrock is greater than 60 inches. Water table is normally more than 6' below the surface.

- 59 BUCKSPORT MUCK: Soil is very poorly drained; water is removed from the soil so slowly that free water remains near the surface. Depth to bedrock is greater than 60 inches.

- 600 GRAVEL PIT: On –site investigation required

- 280b ADAMS LOAM SAND, 3 TO 8 PERCENT SLOPES: Soil is excessively drained; water is removed very rapidly. Depth to bedrock is greater than 60 inches. Water table is normally more than 6' below the surface.

- 280c ADAMS LOAM SAND, 8 TO 15 PERCENT SLOPES: Soil is excessively drained; water is removed very rapidly. Depth to bedrock is greater than 60 inches. Water table is normally more than 6' below the surface.

- 913e LYMAN-TUNBRIDGE-BERKSHIRE ASSOCIATION, STEEP, VERY ROCKY
- LYMAN: component is somewhat excessively drained, water is removed rapidly. Depth to bedrock is between 10 and 20 inches. Water table is normally more than 6' below the surface.

- TUNBRIDGE: component is well drained; water is removed readily, not rapidly. Depth to bedrock is between 20 and 40 inches. Water table is normally more than 6' below the surface.

- BERKSHIRE: component is well drained; water is removed readily, not rapidly. Depth to bedrock is between 20 and 40 inches. Water table is normally more than 6' below the surface.

Constraints

The majority of absolute constraints are in the northern portion of the town. Also, significant amounts of land zoned industrial contain DEP river buffers. The presence of these features will require state level review and permitting prior to development, and limit the type and amount of development in these areas.

- *River Buffers and Wetlands*: Several hydrological resources in the form of lakes, rivers, streams and wetlands were identified within the town of Ashburnham. When assessing the development potential of each site, the presence of wetlands and river buffers was deemed to be a strong deterrent to development within the parcels.

- *Floodplains, Wildlife Habitat, Aquifer Areas, Vernal Pools*: The identification of floodplains, wildlife habitat, aquifers and vernal pools is important because local, state and federal regulations may prevent development in ecologically sensitive areas or at least have strict design guidelines to mitigate negative impacts caused by development. Massachusetts has strong environmental protection regulations, most notably, the Massachusetts Environmental Policy Act (MEPA). MEPA does not issue or deny permits; however, MEPA reviews will strongly influence the issuance of permits. Based on the abundance of wetlands and natural

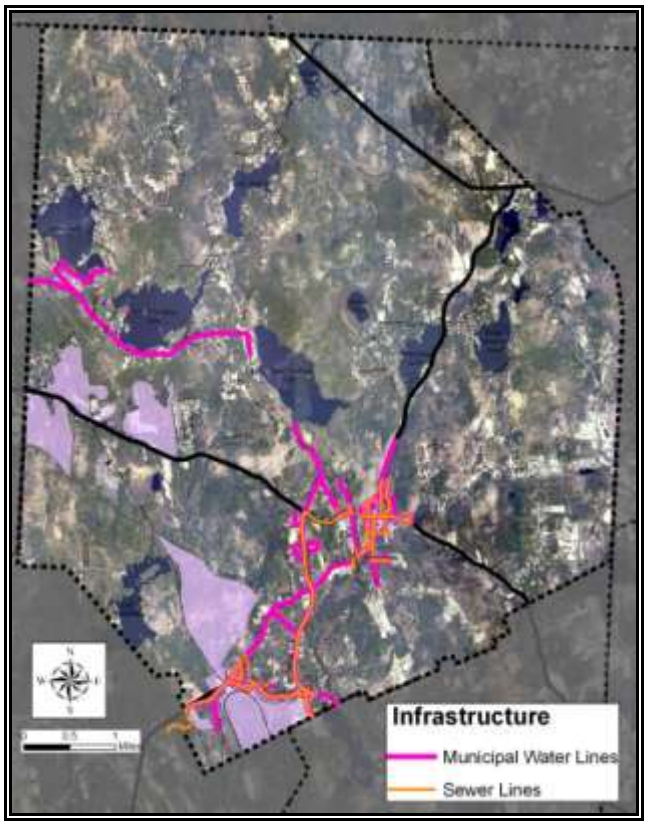
resources identified within Ashburnham, a more comprehensive environmental analysis would likely be required prior to the development within the majority of the industrially zoned parcels.

- *Soils*: Ashburnham has a range of soil types that differ in their depth, rate of absorption and compaction qualities. Industrial parks create many impervious surface areas through the construction of roads, rooftops, and parking lots that result in storm-water runoff. The ability of the soils to handle this access runoff and to accommodate on-site septic systems directly affects the development potential of each site. In addition to soil types, the presence of ledge beneath the surface can alter drainage patterns. The soil analysis completed in this study is only preliminary and if a site were to be developed, further site-specific soil testing would be required to determine the types of soil present.

- Infrastructure

Limited public sewer and water services are provided by the Town (*Figure 8*). As is depicted in the map, the public services are concentrated in south/central Ashburnham, in the vicinity of the Village Center. No infrastructure currently services the Industrially zoned parcels of land located in the western part of town.

Figure 8: Infrastruture



Sewer

Public sewer services are currently provided through the city of Gardner, located to the southwest of Ashburnham. It was reported by the Town of Ashburnham that with the planned development of a 108 unit housing project, the town will be at or nearing the sewer capacity as outlined in their agreement with the City of Gardner. Public sewer supply is an important factor for industrial park selection. Industries that create large quantities of sewage or sewage contaminated with chemicals will most likely locate in a park with public sewer. Ashburnham is close to its sewage capacity, a reality that must be addressed. Renovating and upgrading sanitary sewage infrastructure is a major capital investment that must be carefully considered by the town, especially since their sewage lines are an extension of the Gardner system. It may be politically or economically unfeasible to increase Ashburnham's sewage capacity—again, an issue for many industrial uses. Even if connections and renovations are possible, the topography and geology may increase the cost of development enough to discourage potential industrial users.

Water

Upper Naukeag Lake, located in the center of the Town, is the source of potable water. The Town of Winchendon, located adjacent to the west of Ashburnham, shares the water resource. A main line owned by Winchendon runs from the reservoir through the western part of Town. Any connections for parcels on the western part of Ashburnham to this source would require a permit through the Town of Winchendon. Municipal water supply is essential for many industrial uses such as manufacturing, food processing and most heavy industrial uses. Although state and federal grants may be available to help extend water lines, it is still an expensive endeavor that may discourage developers. Furthermore, Ashburnham's underlying geology may make extending water lines unfeasible and much more expensive. Sites that cannot be connected to public water supply need water supply from local wells and aquifers, a feature that greatly reduces the types of appropriate industries. Even proximity to a water line does not guarantee connection if geology and topography make such a connection unfeasible and impractical.

Natural Gas

There is no natural gas service in town.

High speed Internet

High speed internet service is limited to South Ashburnham.

Electricity

Ashburnham Municipal Light Department is the town-owned and operated electric company which provides power to the entire town.

Industrial parks are typically supported by basic infrastructure such as town supplied sewer, water, natural gas and telecommunications. Ashburnham has limited infrastructure which

reduces the type of industries that would be attracted to town. Based upon the review of an available infrastructure, we recommend that the Town determine if they will construct these services or if future developers will be responsible. (Please see pages 49-50 for potential funding sources for such improvements.)

- Transportation

Transportation serves as a critical component to industrial site selection criteria. Industrial realtors often seek large undeveloped, or green-field, sites with unencumbered access to a highway or the interstate system and within an hour of a commercial airport. Although becoming less critical in recent decades of expanded automotive shipping, active rail access can be an advantage for freight and cargo transport to a site.

Roads

Figure 9: Local Roads

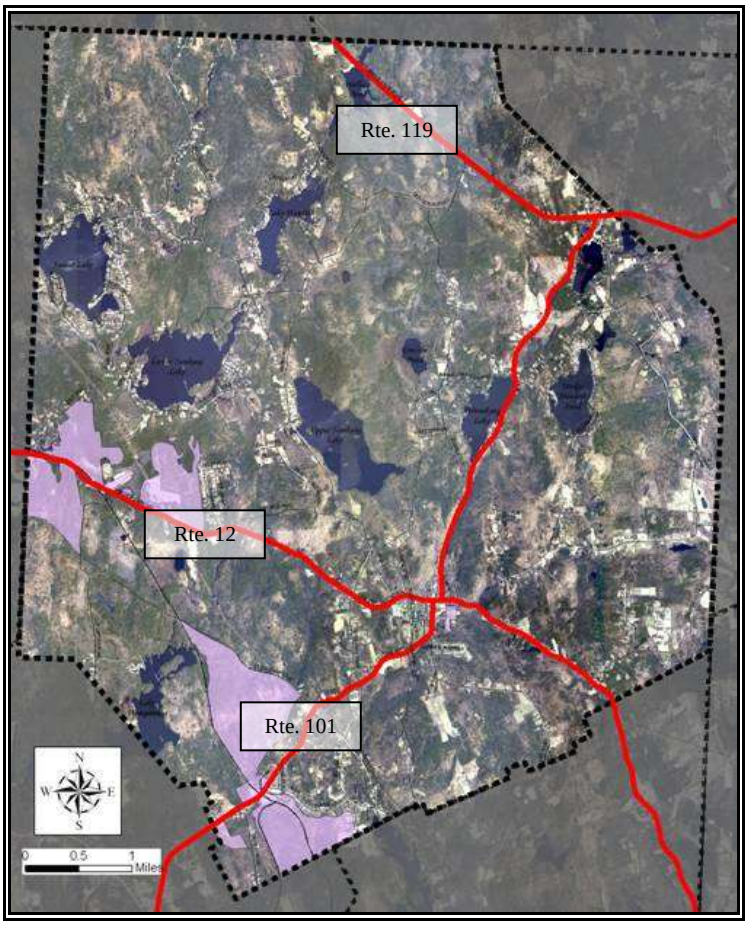
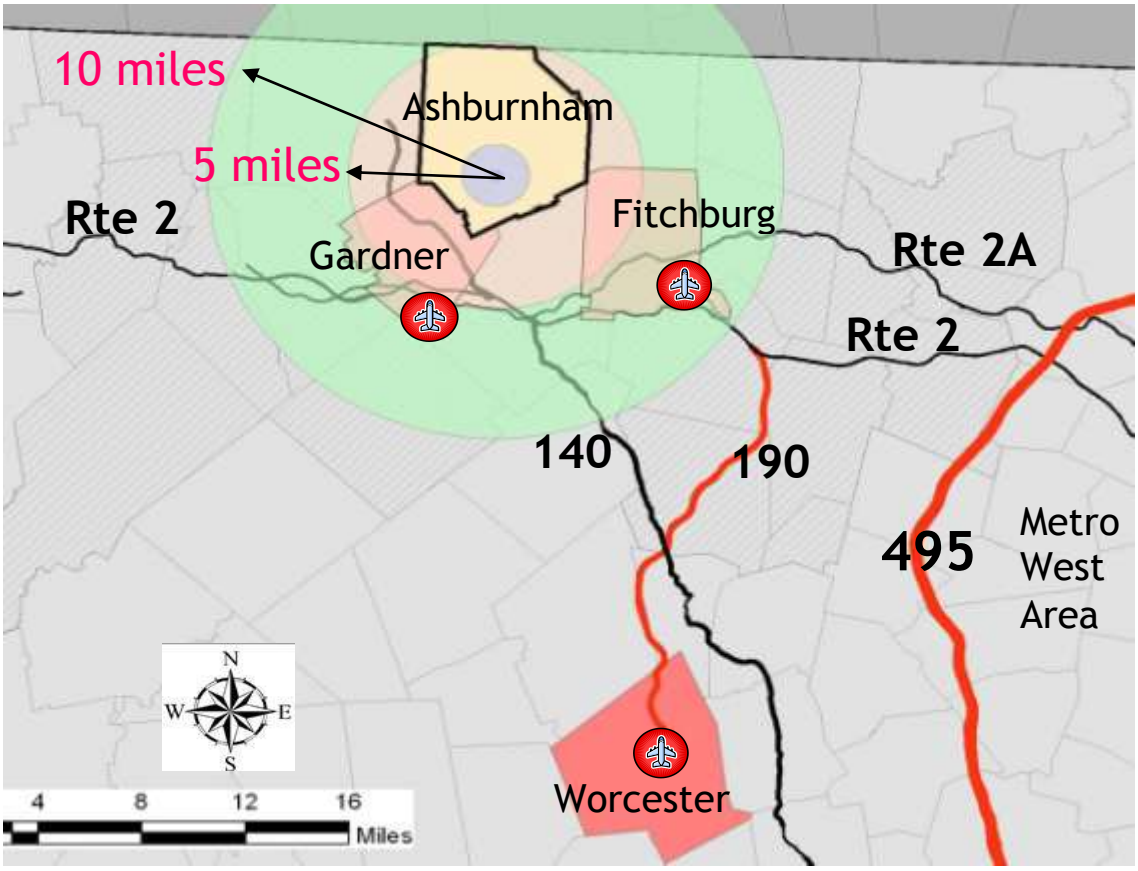


Figure 10: Regional Transportation



In order to handle the increased traffic demands that come with development, the Town needs to have adequate roads. Three state routes traverse the Town (*Figure 9*): Route 12 and 119 run east-west and Route 101 runs north-south. While these are state highways, they are only two-lane routes. Traffic studies would need to be conducted to determine capacity of existing roads and how the capacity would affect the size of future developments.

Figure 10 (on page 21) shows the major highways and transportation opportunities located in the region. Ashburnham has no direct exits to Routes 2 or 495. However, Route 140 is located just outside the town border and provides direct access to Route 2 and into New Hampshire. Ashburnham sits a little over seven miles from Rte. 2, a four-lane state highway which runs east-west through northern Massachusetts from Boston to Williamstown. In 2005 the Massachusetts Executive Office of Transportation calculated that 32,500 vehicles pass through the area where drivers would most likely exit to visit Ashburnham, compared to over 48,000 in nearby Fitchburg or nearly 43,000 in economically comparable Westminster.

Airports

There are two light commercial airports in Gardner and Fitchburg. Located forty miles from Ashburnham is the Worcester Regional Airport, an airfield currently offering no commercial service. Lying five miles from a highway via winding and congested municipal roads, Worcester Regional is not currently considered a commercial or industrial resource. Three international airports (Boston's Logan Airport, Manchester, New Hampshire Airport, and TF Green Airport in Providence, Rhode Island) are located within two hours drive.

Rail

There is currently an inactive rail line located in the southwest part of Ashburnham, which the Town hopes to convert into a rail trail in the future. A rail line extends into the southern edge of Ashburnham and provides sporadic freight traffic through the town. There is neither a depot, supporting infrastructure, nor supporting land uses to accompany or complement this service. However, these services are offered in both Fitchburg to the east and Gardner to the west. Commuter rail service extends from Boston to Fitchburg, a marginally convenient ten miles away. There are no plans to extend service beyond Fitchburg.

The Town of Ashburnham has an economic disadvantage in transportation. Challenges to its limited and obstructed access to nearby highway and rail systems are sufficiently compounded by facilitated and supported access in neighboring Fitchburg and Gardner, which show little sign of saturated industrial markets or built out status. Without a change in the opportunities available in these nearby communities, an industrial realtor would have little reason to consider Ashburnham for an industrial development.

Despite this competitive disadvantage in terms of industrial uses; the Town may have an opportunity to gain from the success of its more economically viable counterparts. Although there is no commuter rail extension planned for Ashburnham, the MBTA has considered increasing service to Fitchburg, an improving historic manufacturing community on the fringe of Greater Boston. Enjoying simple access from town center to the Fitchburg Station, Ashburnham seems to be in a position to attract commuters to its naturally unique scenery and relaxed ambiance, which in turn may spur commercial activity from grocery, restaurant and banking services to office and retail space.

Similarly, industrial growth in strategically located communities like Gardner and Westminster may offer an opportunity for Ashburnham to provide industrial services like warehousing and storage facilities. If these places develop industrial anchors for the region, Ashburnham could position itself to enter the sector with its own niche industries catered to its limited space, infrastructure and advantages, offering some opportunity to pursue a regional eco-industrialism, in which industries collectively bargain or distribute resources to each other for ecologically sensitive business practices, and furthering the community's image as a year-round New England retreat.

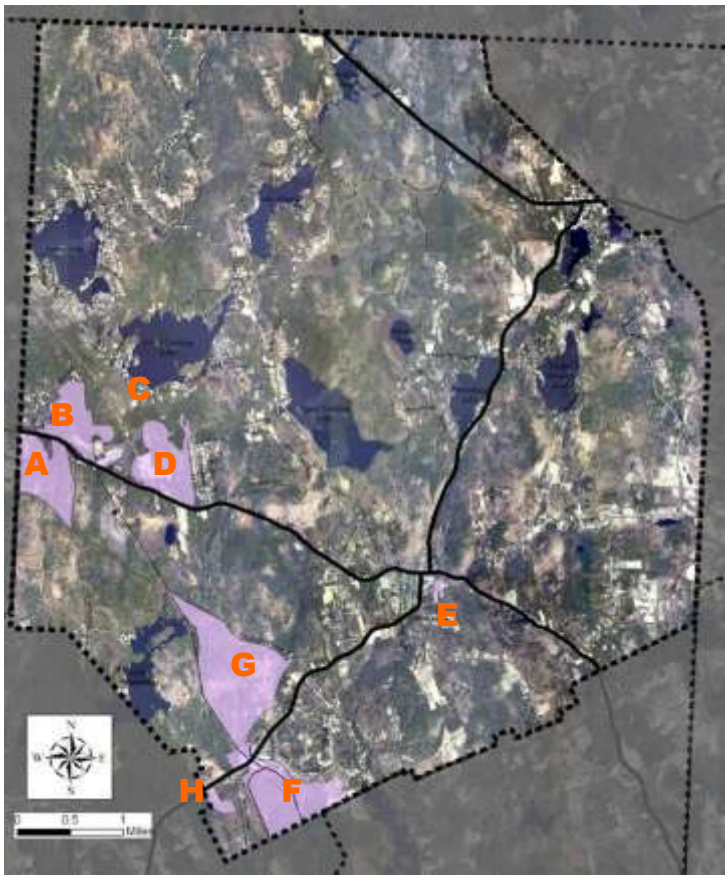
Section IV. Parcel Specific Assessment

Existing Industrially Zoned parcels were the focus for the first phase of the assessment. Eight parcels (*Figure 11*) of land were assessed using the previously outlined assessment criteria. The criteria show the general feasibility of developing each site, and are simplifications used to make developers and the town aware of any issues that may restrict future development. It must be emphasized that just one criterion could make the entire site undevelopable, such as large areas of steep slopes along the site's only road frontage.

The summary highlights the prominent advantages and disadvantages to development and makes recommendations if each site were to be developed as an industrial park. Although the analysis is site specific, this report helps identify further studies that would need to be conducted if each site were actually developed.

- Light Industrial Zones

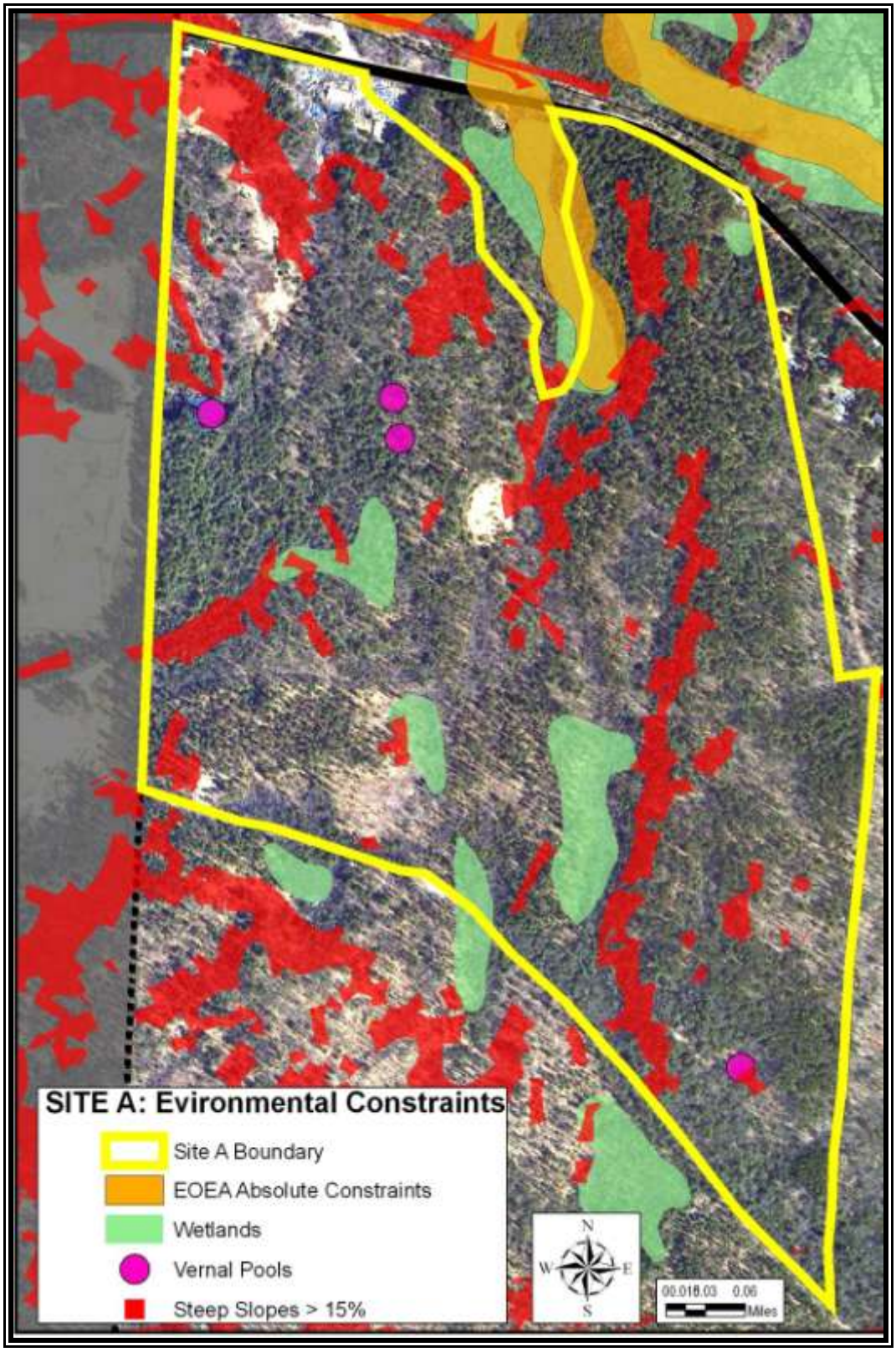
Figure 11: Eight Existing Industrial Zones



- There are four areas zoned for Light Industrial Uses (sites A, B, C, and D in *Figure 11*) that we assessed in this study. The area is not in close proximity to public sewer and due to the distance of the existing lines, topography, and geology, connection to public sewer is unlikely. The proximity to the municipal water lines may make such connections feasible in the future if a development wished to incur this extra cost. It is possible that financial assistance could be obtained through such programs as the Economic Development Incentive Program, the Pre-development Assistance Program, the Capital Access Program or the Community Capital Fund, all discussed in greater detail on pages 49 to 50 of this Report.

The advantages of these zones are the proximity to Route 140, a primary roadway which connects directly to Route 2, the major East-West corridor in this part of the state. The other possible advantages are limited residential development abutting these zones and the proximity to areas in Winchendon that are zoned for industrial uses.

Site A


SITE A: Evironmental Constraints
Site A Boundary
EOEA Absolute Constraints
Wetlands
Vernal Pools
Steep Slopes > 15%
N
W
E
S
0 0.015 0.03 0.06
Miles

Site A

Number of Owners: 4 Number of Parcels: 4
Combined Acreage: 204.1 Number of Parcels >50 Acres: 2
Current Uses: Forested, Sand and Gravel Excavation
% in EOEA Absolute Constraints: 1.15% Net Usable Land Area: 188.9 acres; 92.56 %

Major Advantages:

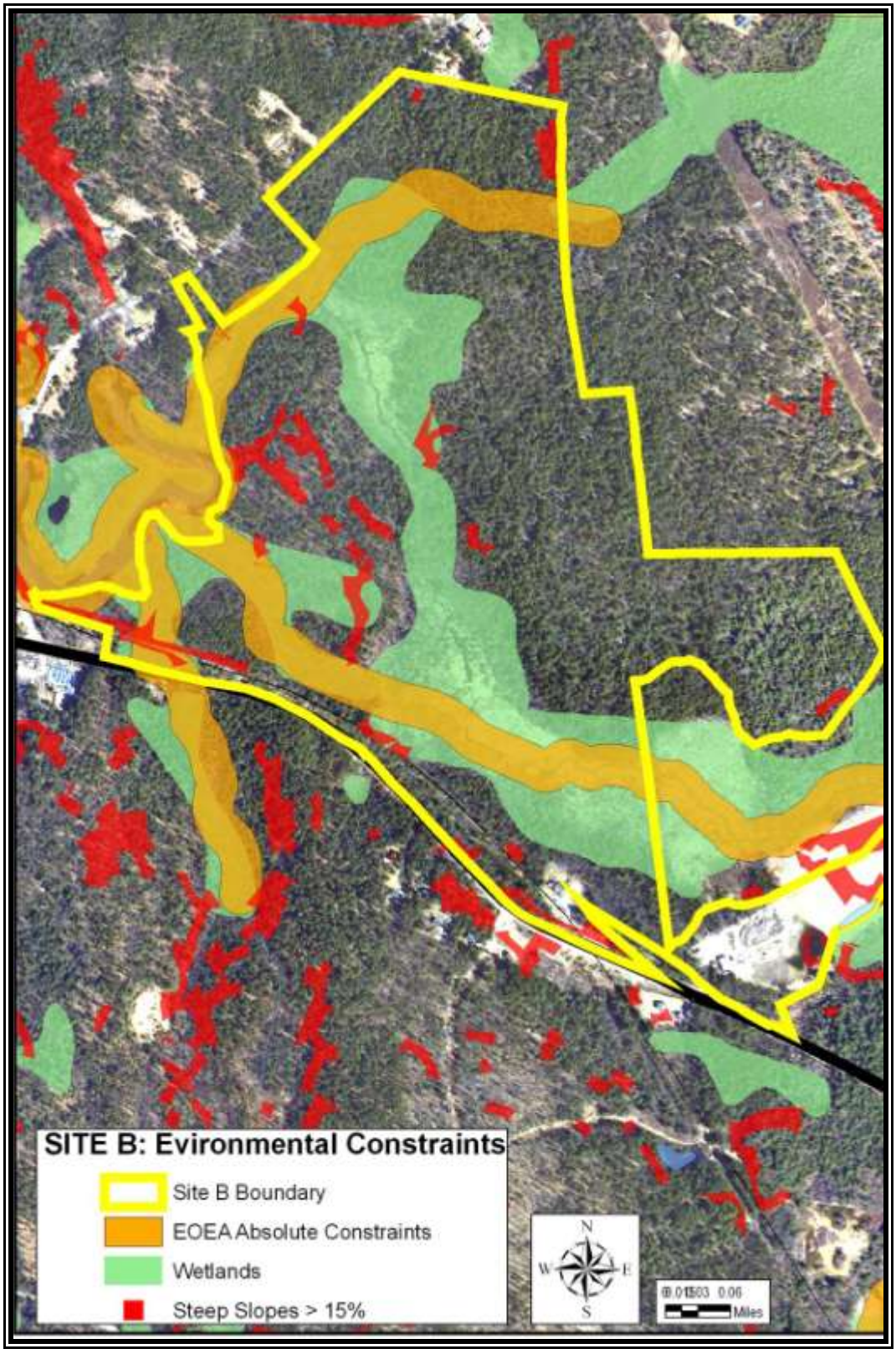
- Plentiful acreage with individual parcels of significant size—One parcel with approximately 113 acres has considerable road frontage on Route 12, a primary access road and the other large parcel (approx. 77 acres) abuts the largest parcel.
- There are not residential uses adjacent to the site.
- There is limited area of the site in Environmental Constraints.

Major Disadvantages:

- There are numerous areas on the site with steep slopes (greater than 15%).
- The area zoned does not have continuous road frontage, but two separate, smaller segments of frontage.
- No connection to utilities.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses	1		Not adjacent to Existing Residential uses	
Site Topography: minimal slopes			Site Topography: numerous slopes	1
Municipal Water lines adjacent to site			Municipal water lines NOT adjacent to site	1
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**8**			**5**

Site B


SITE B: Evironmental Constraints
Site B Boundary
EOEA Absolute Constraints
Wetlands
Steep Slopes > 15%
N
W
E
S
0 0.015 0.03 0.06
Miles

Site B

Number of Owners: 9
Combined Acreage: 187.44
Current Uses: Mainly Forested
Net Usable Land Area: 109.18 acres; 58.25%

Number of Parcels: 9
Number of Parcels >50 Acres: 2
% in EOEA Absolute Constraints: 14.34%

Major Advantages:

- Plentiful acreage with one parcel of significant size: 148 acres
- There are not many areas with steep slopes (greater than 15%).

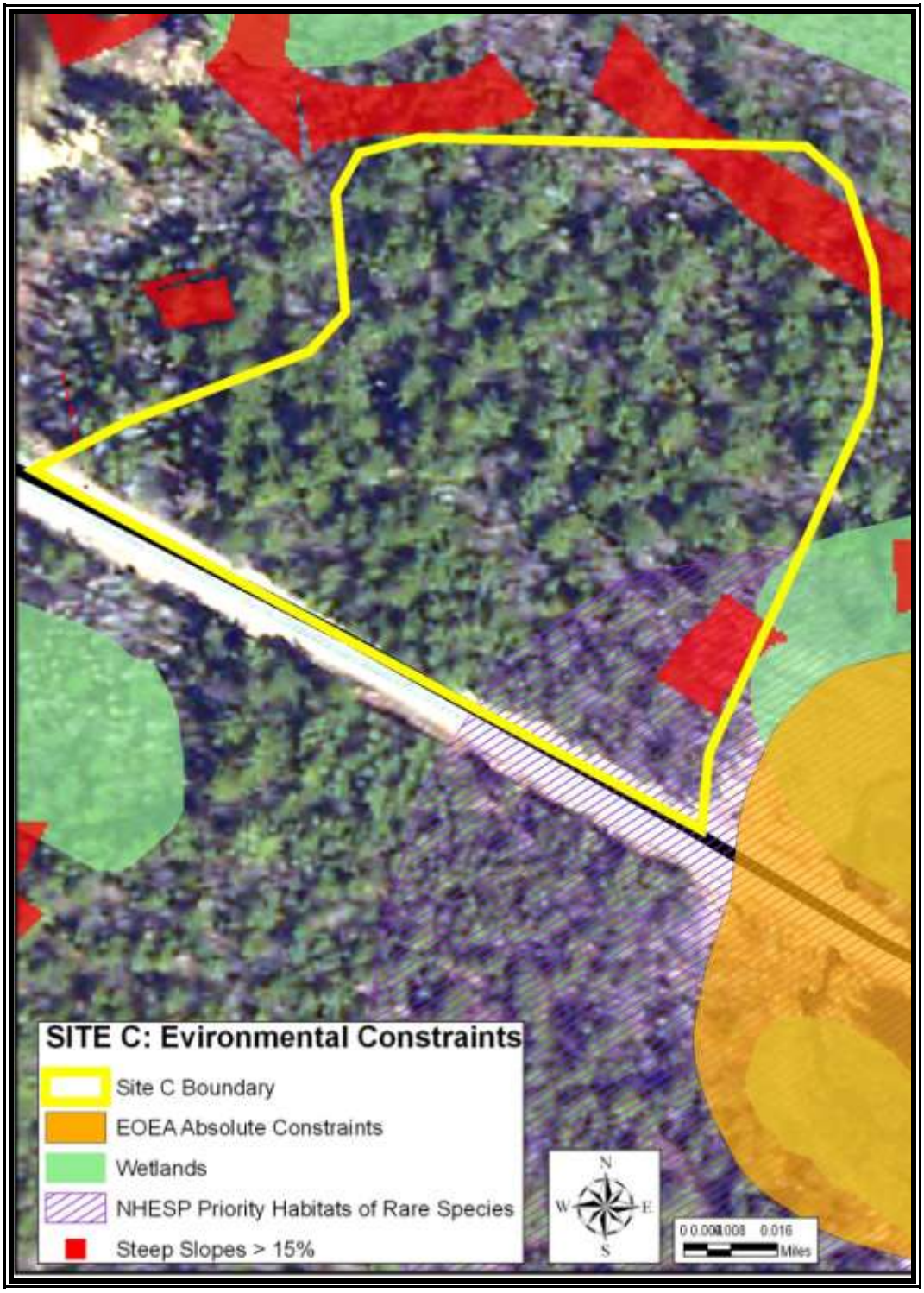
Major Disadvantages:

- There is a large presence of streams, wetlands, and vernal pools on the site.
- No connection to utilities.
- The site is irregularly shaped, limiting development footprints in certain areas.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses	1		Not adjacent to Existing Residential uses	
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site			Municipal water lines NOT adjacent to site	1
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site	1		NOT a Re-use of industrial or disturbed site	
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer			Greater than 10 % site in 100 ft River Buffer	1
Less than 10% of site in NWI Wetlands			Greater than 10% of site in NWI Wetlands	1
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	1
Total	**8**			**6**

Another significant issue at this site is that much of the land (148 acres) is currently under MGL Chapter 61. The current owner may be reluctant to see the land end up in uses that are not conservation oriented. Given that possibility, some eco-industrial land use might offer real advantages.

Site C


SITE C: Evironmental Constraints
Site C Boundary
EOEA Absolute Constraints
Wetlands
NHESP Priority Habitats of Rare Species
Steep Slopes > 15%
N
W
E
S
0 0.008 0.016
Miles

Site C

Number of Owners: 1
Combined Acreage: 6.15
Current Uses: Forested
Net Usable Land Area: 5.28 acres; 86.00%

Number of Parcels: 1
Number of Parcels >50 Acres: 0
% in EOEA Absolute Constraints: 0%

Major Advantages:

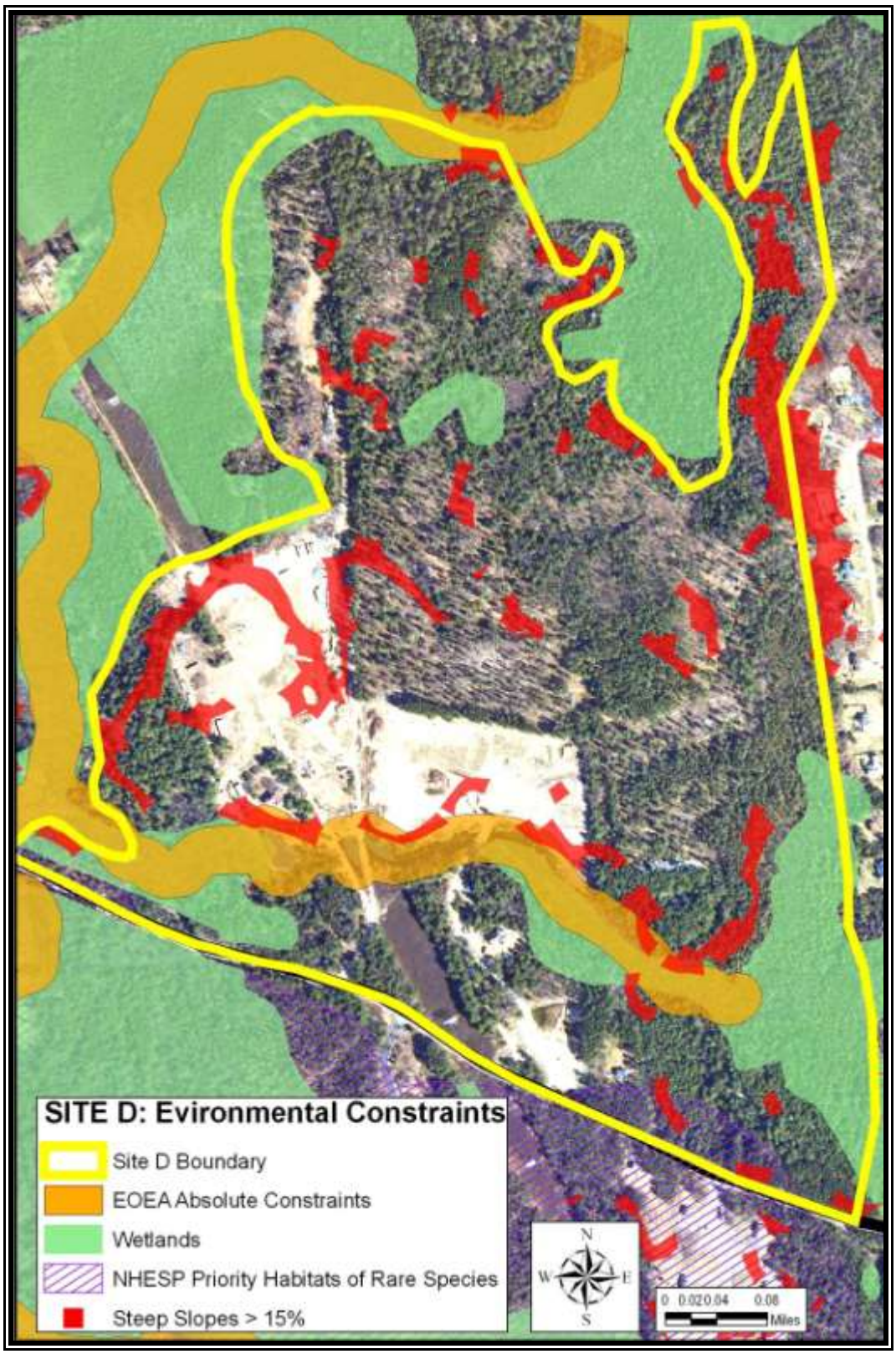
- Zoned for Light Industrial and is one parcel with one owner.
- Public road access is adjacent to the site.
- No residential uses abutting the site

Major Disadvantages:

- The site is only 6 Acres—and is isolated from nearby industrial zones with areas zoned for residential uses.
- No connections to utilities.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres			Site size: < 50 Acres	1
Adjacency to Existing Residential Uses	1		Not adjacent to Existing Residential uses	
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site			Municipal water lines NOT adjacent to site	1
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat			Greater than 25% of site designated as protected habitat	1
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**7**			**6**

Site D


SITE D: Evironmental Constraints
Site D Boundary
EOEA Absolute Constraints
Wetlands
NHESP Priority Habitats of Rare Species
Steep Slopes > 15%
N
W
E
S
0 0.020.04 0.08
Miles

Site D

Number of Owners: 10
Combined Acreage: 219.32
Current Uses: Forested and Gravel Extraction
Net Usable Land Area: 159.52 acres; 72.73%

Number of Parcels: 11
Number of Parcels >50 Acres: 2
% in EOEA Absolute Constraints: 7.60 %

Major Advantages:

- Two large parcels of approximately 87 acres and 166 acres constitute most of the site and both these parcels abut each other and have road frontage.
- An abandoned rail line runs through the site possibly providing an opportunity to link it to the lakes and other areas in town through a green network of rail trails.

Major Disadvantages:

- Residential uses (a new subdivision) are adjacent along the entire Eastern side of the site.
- No connections to utilities.
- There are numerous areas with steep slopes greater than 15%.

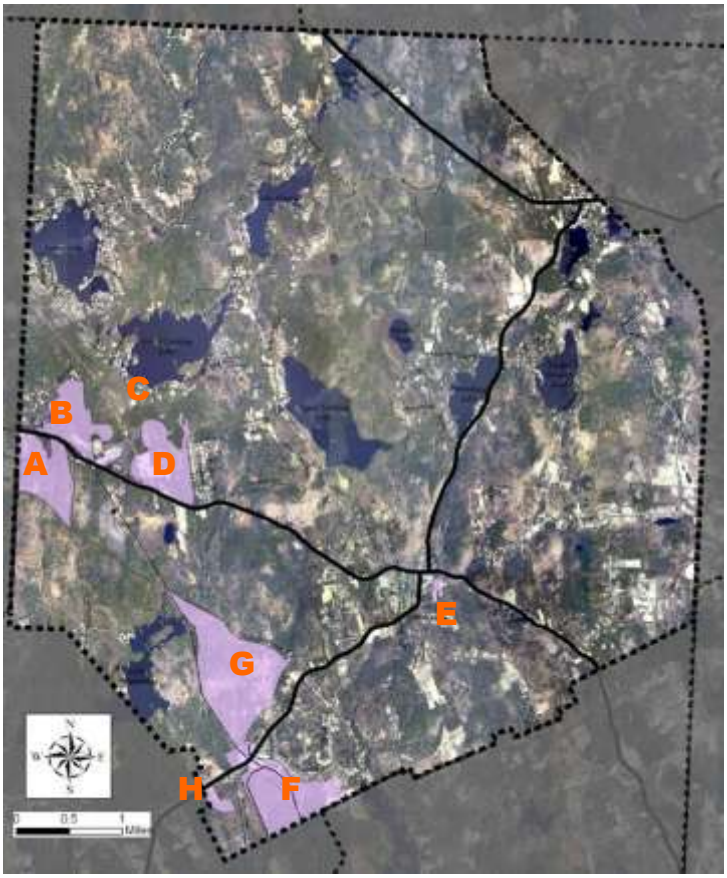
ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses			Not adjacent to Existing Residential uses	1
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site			Municipal water lines NOT adjacent to site	1
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site	1		NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands			Greater than 10% of site in NWI Wetlands	1
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**8**			**6**

Industrial Zones

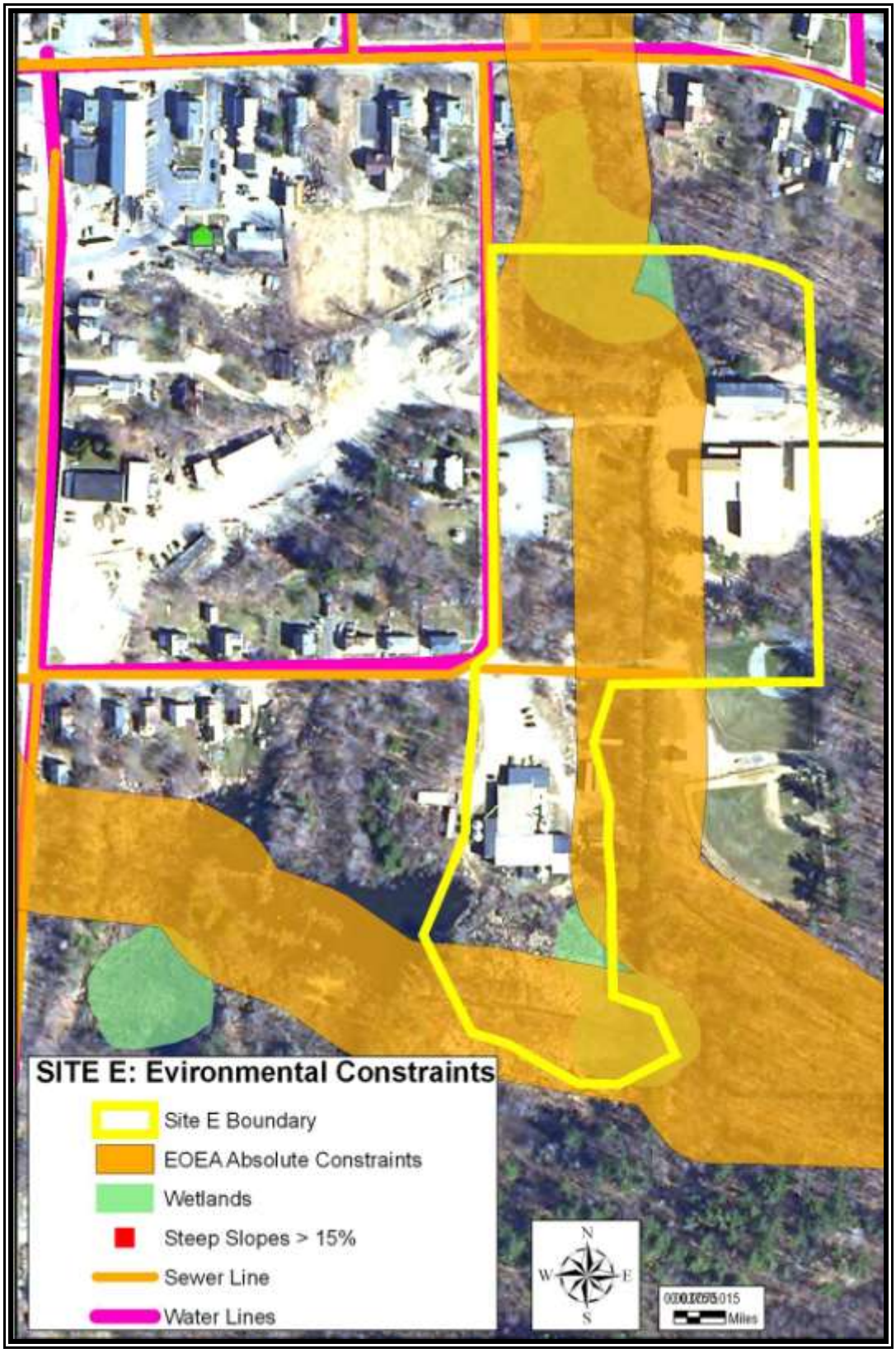
There are four areas zoned for Industrial Uses (sites E, F, G, and H in *Figure 11*) that we assessed in this study. The areas are in close proximity to public sewer and municipal water supply. It is uncertain at this time the range of service for high speed internet in Ashburnham, but it is speculated that these Industrial Zones are serviced by high speed internet.

The advantages of these sites are that three (Sites F-H) of the four areas are congregated in the southeast corner of Ashburnham, give the sites close proximity to Route 140, a primary roadway which connects directly to Route 2, the major East-West corridor in this part of the state. The other possible advantages of these three areas are limited residential development abutting the sites. The fourth site, Site E is located near the town center, which can be both an advantage (proximity to infrastructure and residents) and a disadvantage (neighboring uses and only roads are through town center).

Figure 11: Existing Industrial Zones



Site E


SITE E: Evironmental Constraints
Site E Boundary
EOEA Absolute Constraints
Wetlands
Steep Slopes > 15%
Sewer Line
Water Lines
N
W
E
S
Miles

Site E

Number of Owners: 6 Number of Parcels: 15
Combined Acreage: 10.86 Number of Parcels >50 Acres: 0
Current Uses: Restaurant, Community Ball fields, Local industrial use
% in EOEA Absolute Constraints: 46.50 % Net Usable Land Area: 1.54 acres; 14.18%

Major Advantages:

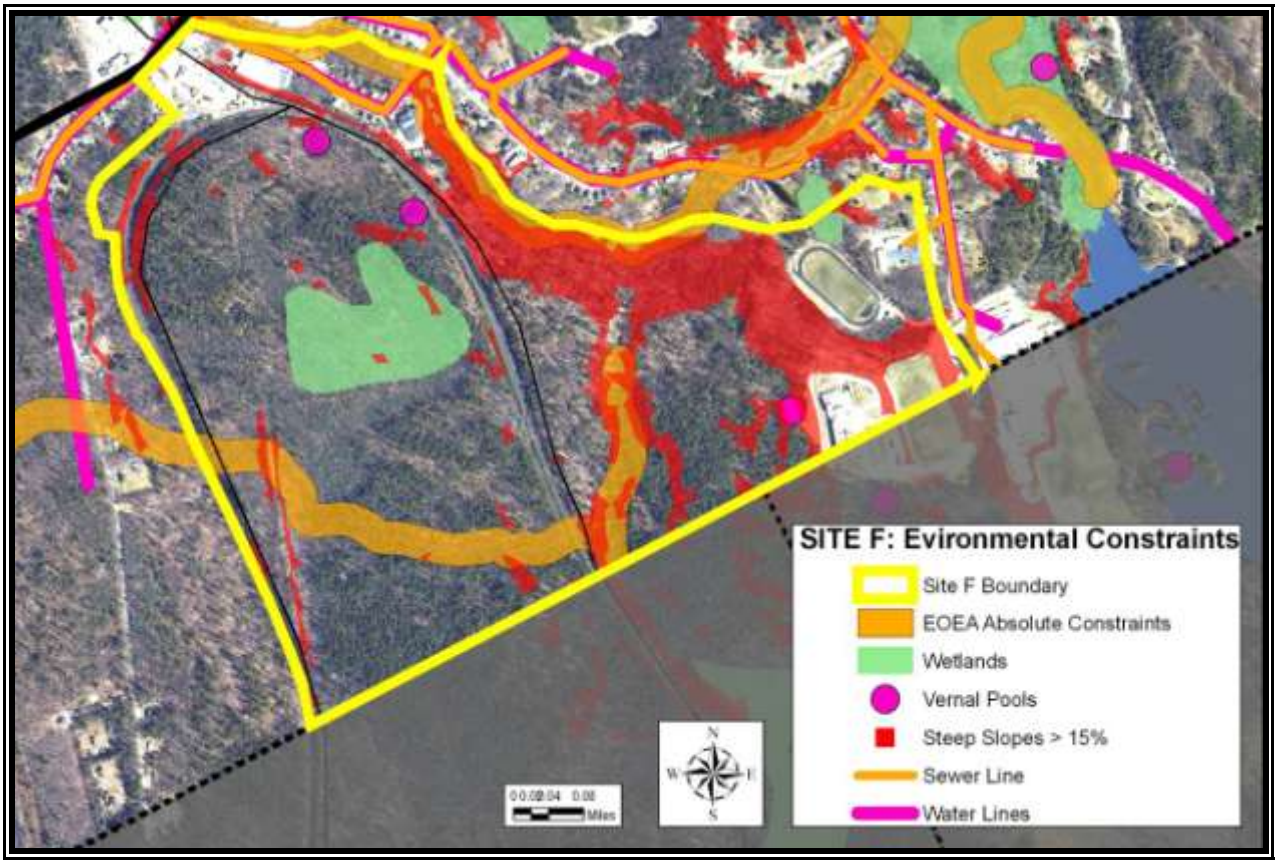
- Proximity to town center may be attractive for light industrial uses, office space or commercial uses.

Major Disadvantages

- The site is comprised of many small parcels and separate owners.
- Much of the site is contained within the Massachusetts DEP Rivers Protection Act buffer and identified Wetlands, requiring an extensive environmental analysis if the site were to be developed.
- Access to the site is along narrow, populated residential streets.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels			Multiple parcels or Multiple Owners	1
Site size: > 50 Acres			Site size: < 50 Acres	1
Adjacency to Existing Residential Uses			Not adjacent to Existing Residential uses	1
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site	1		Municipal water lines NOT adjacent to site	
Sanitary Sewer lines adjacent to site	1		Sanitary Sewer NOT lines adjacent to site	
Re-use of industrial or disturbed site	1		NOT a Re-use of industrial or disturbed site	
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer			Greater than 10 % site in 100 ft River Buffer	1
Less than 10% of site in NWI Wetlands			Greater than 10% of site in NWI Wetlands	1
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)			Greater than 10% of site in Conservation (Permanent Protection)	1
Total	**6**			**7**

Site F


SITE F: Evironmental Constraints
Site F Boundary
EOEA Absolute Constraints
Wetlands
Vernal Pools
Steep Slopes > 15%
Sewer Line
Water Lines
N
W
E
S
Miles

Site F

Number of Owners: 41 Number of Parcels: 51
Combined Acreage: 269.44 Number of Parcels >50 Acres: 2
Current Uses: State Forest, Oakmont Regional H.S., current industrial and residential uses.
% in EOEA Absolute Constraints: 11.21 %, total in constraints 84.40%
Net Usable Land Area: 63.04 acres; 23.40%

Major Advantages:

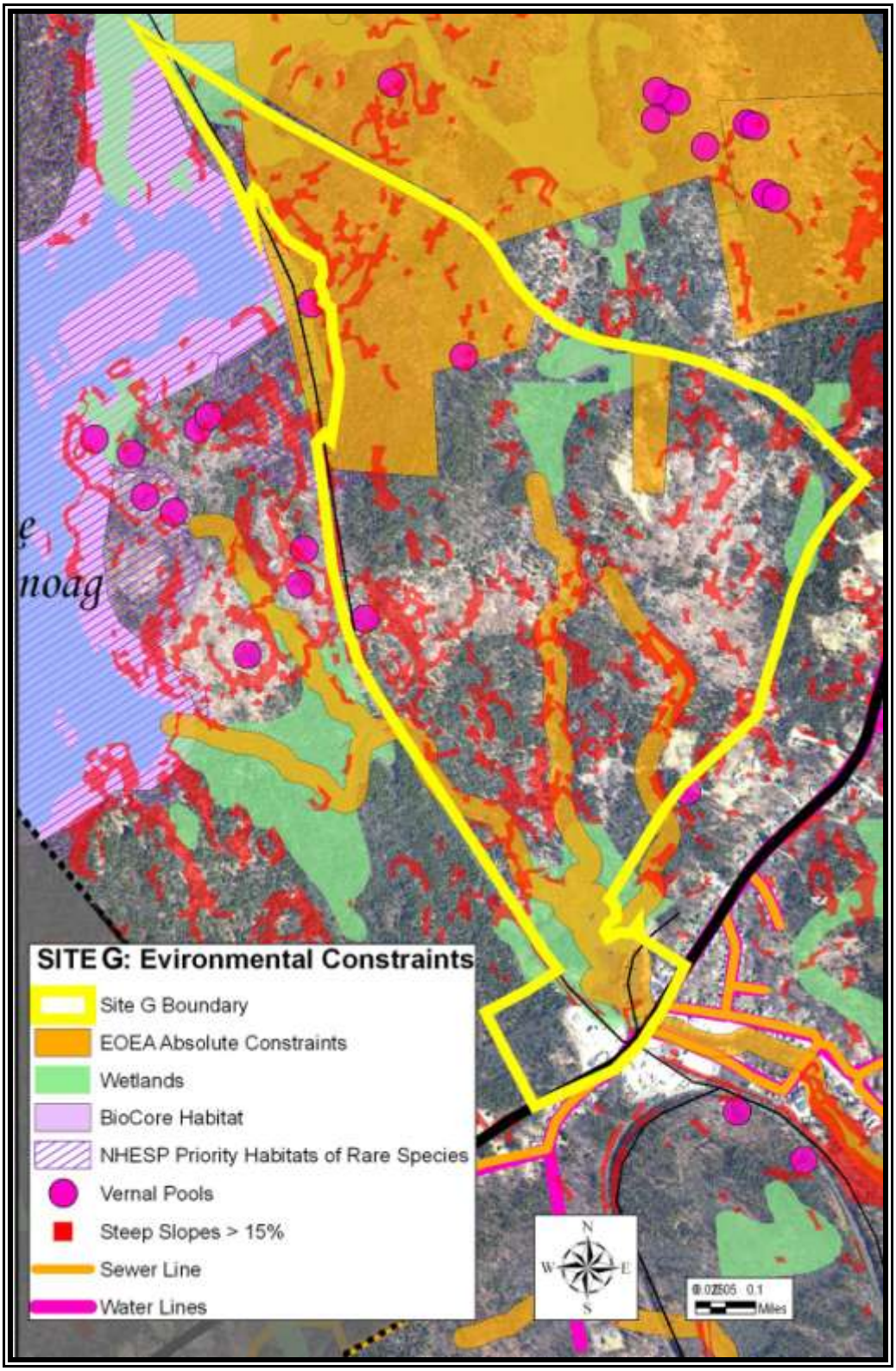
- Located along Route 101, a primary transportation route.
- Adjacent to Municipal Water and Public Sewer utilities
- Current Industrial uses located within this zone.

Major Disadvantages:

- The two parcels greater than 50 acres are: 1) State Forest and 2) Town owned land that houses the regional high school and junior high school.
- There is a significant acreage in steep slopes and environmentally sensitive habitat.
- An active freight line creates an inner boundary within the site, limiting interior access.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels			Multiple parcels or Multiple Owners	1
Site size: > 50 Acres			Site size: < 50 Acres	1
Adjacency to Existing Residential Uses			Not adjacent to Existing Residential uses	1
Site Topography: minimal slopes			Site Topography: numerous slopes	1
Municipal Water lines adjacent to site	1		Municipal water lines NOT adjacent to site	
Sanitary Sewer lines adjacent to site	1		Sanitary Sewer NOT lines adjacent to site	
Re-use of industrial or disturbed site	1		NOT a Re-use of industrial or disturbed site	
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2	1		Greater than 2 miles to Route 2	
Less than 10 % site in 100 ft River Buffer			Greater than 10 % site in 100 ft River Buffer	1
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools				1
Less than 10% of site in Conservation (Permanent Protection)			Greater than 10% of site in Conservation (Permanent Protection)	1
Total	**6**			**7**

Site G


SITE G: Evironmental Constraints
Site G Boundary
EOEA Absolute Constraints
Wetlands
BioCore Habitat
NHESP Priority Habitats of Rare Species
Vernal Pools
Steep Slopes > 15%
Sewer Line
Water Lines
N
W
E
S
0 0.025 0.05 0.1
Miles

Site G

Number of Owners: 20
Combined Acreage: 485.80
Current Uses: Forested
Net Usable Land Area: 256.49 acres; 52.80%

Number of Parcels: 29
Number of Parcels >50 Acres: 2
% in EOEA Absolute Constraints: 30.43 %

Major Advantages:

- Located along Route 101, a primary transportation route.
- Adjacent to Municipal Water and Public Sewer utilities
- One large parcel of 165 acres can accommodate many industrial uses.
- There are not any residential uses adjacent to the site.

Major Disadvantages:

- Access to the site is limited and the only area of road frontage passes through wetlands.
- The town currently owns a parcel that provides an alternative access point to the site—a critical link that should not be developed if industrial uses are targeted for this site.
- A significant portion of the site is within absolute building constraints.
- There are numerous areas with steep slopes and possible concerns with underlying geology.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses	1		Not adjacent to Existing Residential uses	
Site Topography: minimal slopes			Site Topography: numerous slopes	1
Municipal Water lines adjacent to site	1		Municipal water lines NOT adjacent to site	
Sanitary Sewer lines adjacent to site	1		Sanitary Sewer NOT lines adjacent to site	
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat			Greater than 25% of site designated as protected habitat	1
Less than 2 miles to Route 2	1		Greater than 2 miles to Route 2	
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	1
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)			Greater than 10% of site in Conservation (Permanent Protection)	1
Total	**9**			**5**

Site H


SITE H: Evironmental Constraints
Site H Boundary
EOEA Absolute Constraints
Wetlands
Steep Slopes > 15%
Sewer Line
N
W
E

Site H

Number of Owners: 2
Combined Acreage: 26.64
Current Uses: Forested
Net Usable Land Area: 19.57 acres; 73.46%

Number of Parcels: 2
Number of Parcels >50 Acres: 0
% in EOEA Absolute Constraints: 13.18 %

Major Advantages:

- Located along Route 101, a primary transportation route.
- Adjacent to Municipal Water and Public Sewer utilities
- The site is relatively flat and its size is suitable for light industrial uses and 'incubator' industries.
- There are not any residential uses adjacent to the site.

Major Disadvantages:

- The site is not large enough to accommodate many industrial uses or utilize economies of scale found with sites greater than 50 acres.

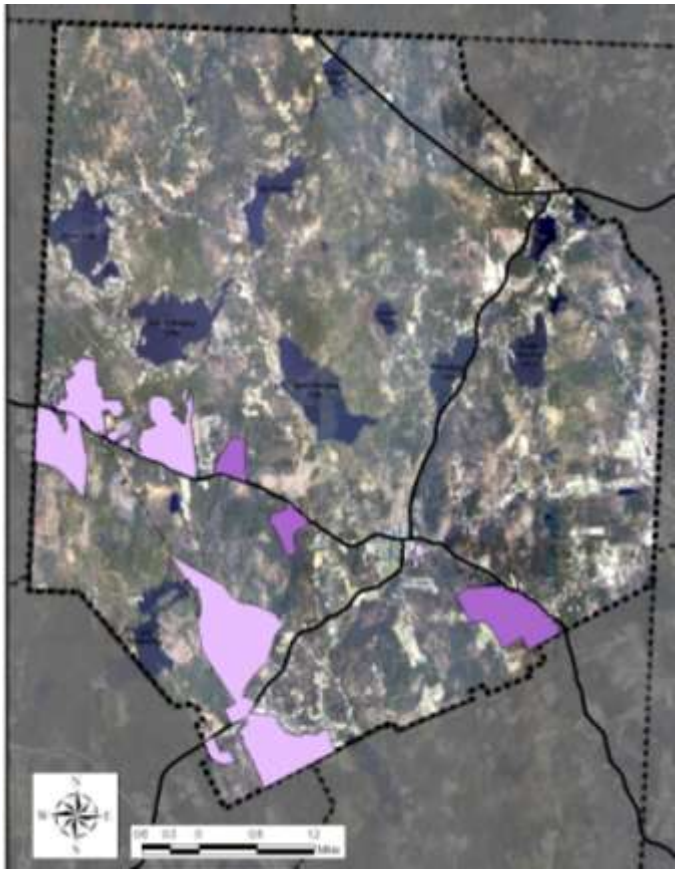
ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres			Site size: < 50 Acres	1
Adjacency to Existing Residential Uses	1		Not adjacent to Existing Residential uses	
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site	1		Municipal water lines NOT adjacent to site	
Sanitary Sewer lines adjacent to site	1		Sanitary Sewer NOT lines adjacent to site	
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2	1		Greater than 2 miles to Route 2	
Less than 10 % site in 100 ft River Buffer			Greater than 10 % site in 100 ft River Buffer	1
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**10**			**3**

Section V. Proposed Industrial Zones

The assessment of existing industrial sites illustrated the importance of Ashburnham to consider zoning more suitable land for industrial development. Although the existing sites have many positive attributes such as containing large parcels and they are not abutting residential uses, the extent of environmental constraints may reduce their desirability from a developer's perspective. As mentioned earlier in the report, just one criterion such as extensive wetlands along the road frontage, may make a site that is otherwise desirable, unsuitable for development; such is the case with many of the existing industrial sites.

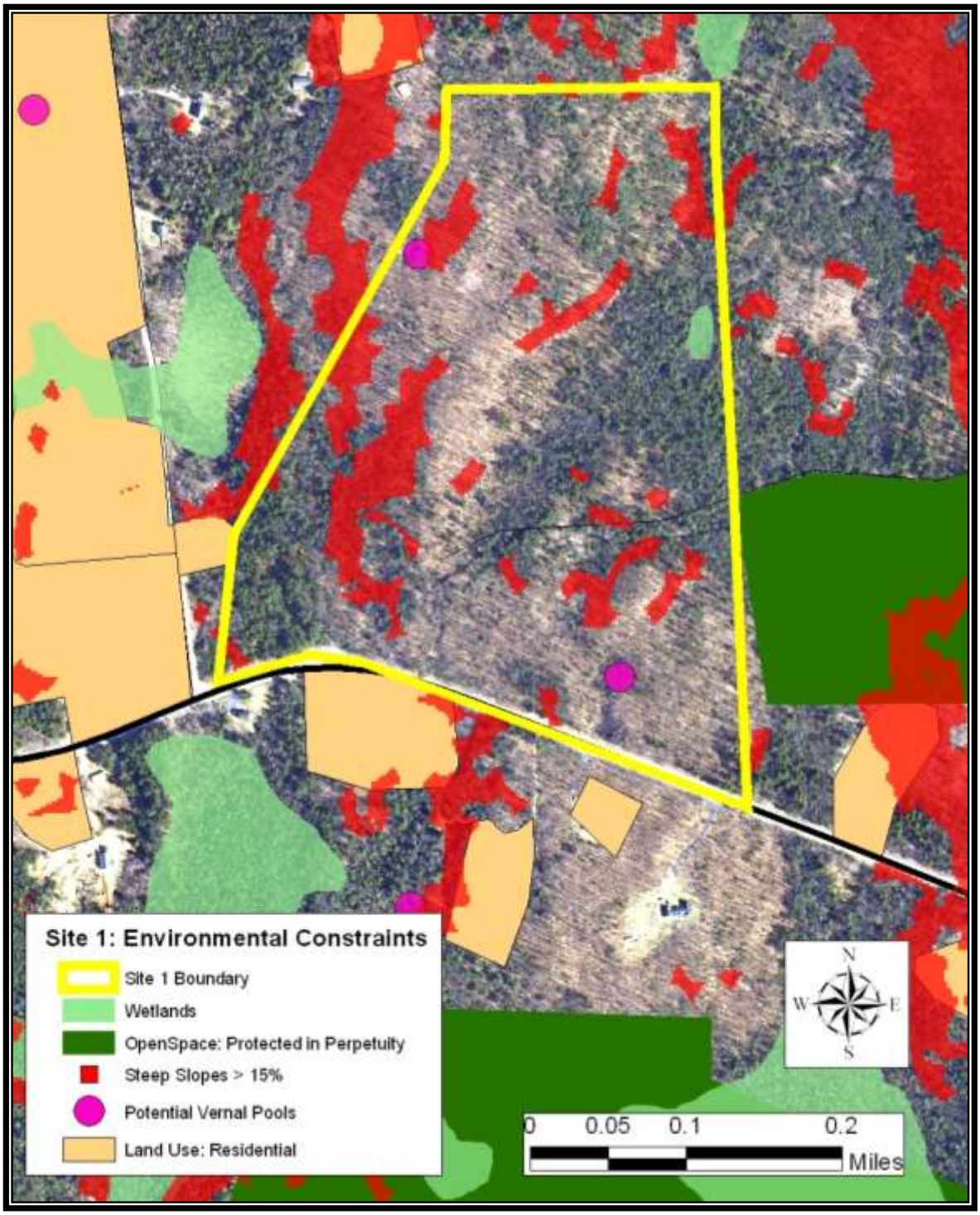
Ashburnham has the advantage of affordable large parcels that are currently undeveloped. However, the amount of developable open space decreases significantly due to environmental constraints, state forests, and distance to infrastructure. After examining the remaining potential land, we advise the town of Ashburnham to just be aware of three sites that could be zoned for industrial use. These recommendations are not meant to inaugurate an immediate zoning change, but allow the town to see the advantages of zoning land that may not have been considered otherwise. For instance, an egregious disadvantage of our proposed sites are that current residential uses may abut the site or even exist within the proposed sites—ostensibly creating tensions with the private land owner.

Proposed Industrial Sites



Nonetheless, the three proposed sites offer advantages that were not found within other open spaces in town. These three sites are located along state roads that run through Ashburnham and connect to Route 2, the major transportation route in Northern Massachusetts. These sites are in the southern portion of town—an area that may be more feasibly connected to town water and sewer than other areas. The proposed sites also have the distinct advantage of more net usable land area (within each site) because they are smaller in land area than the existing industrial sites and therefore do not encompass as many environmental constraints. The disadvantage common to all three sites is that they are currently zoned for residential use, and changing the permitted uses of private land may be quite contentious.

Site 1


Site 1: Environmental Constraints
Site 1 Boundary
Wetlands
OpenSpace: Protected in Perpetuity
Steep Slopes > 15%
Potential Vernal Pools
Land Use: Residential
N
W
E
S
0
0.05
0.1
0.2
Miles

Site 1

Number of Owners: 3
Number of Parcels: 5
Combined Acreage: 67.76
Number of Parcels >50 Acres: 0
Current Uses: Forested
% in EOEA Absolute Constraints: 0.00 %
Net Usable Land Area: 67.46 acres = 99.56% of site

Major Advantages:

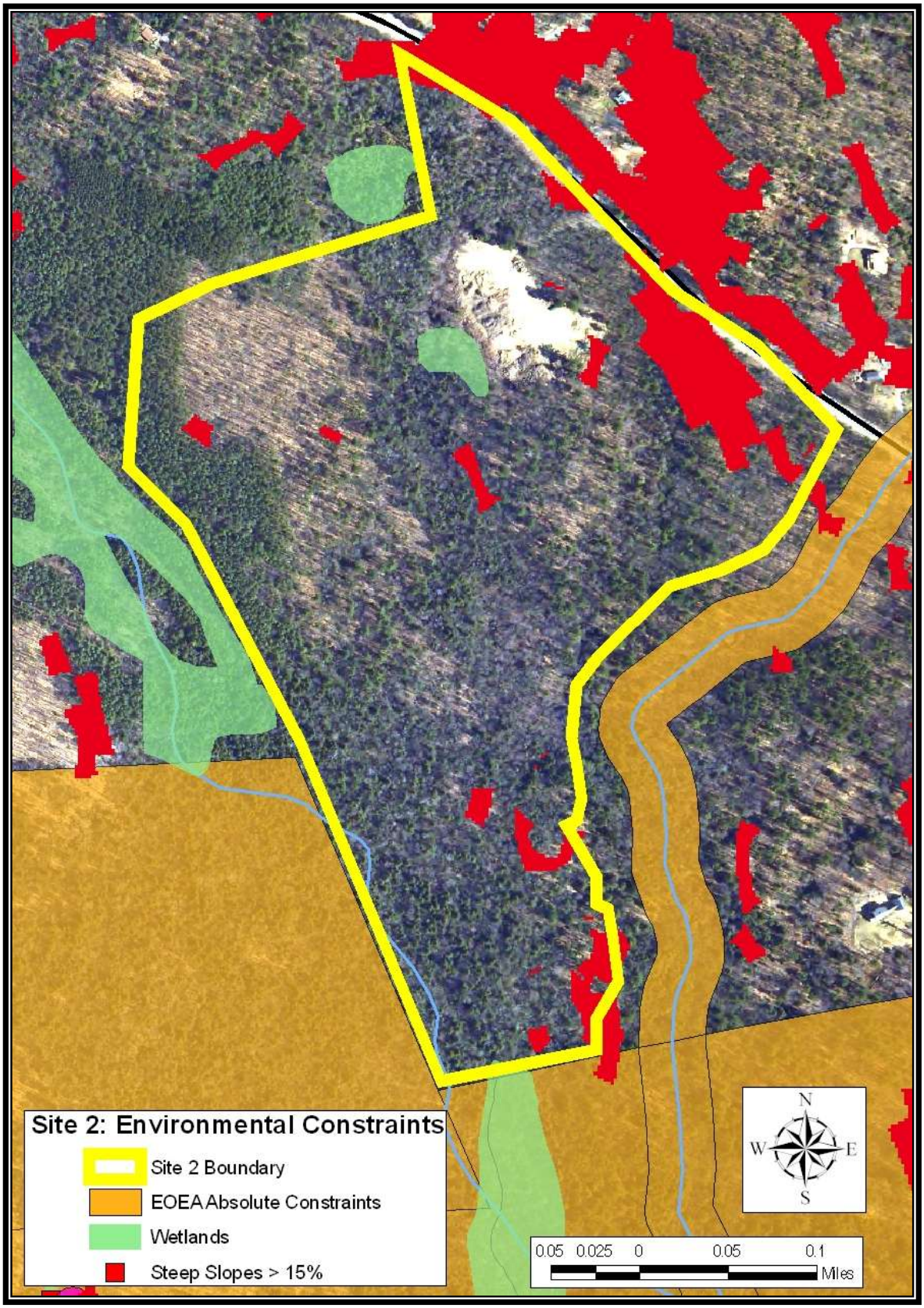
- Approximately 99% of the site does not contain any Absolute or Partial Environmental constraints.
- It is located along Route 12, a primary transportation route.
- The sites size may be more attractive to the types of 'soft' industries (office, storage, light manufacturing) applicable to Ashburnham.

Major Disadvantages:

- The site abuts a new residential subdivision on the west and state protected land on the east.
- There are no existing connections to town water or sewer.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels			Multiple parcels or Multiple Owners	1
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses			Not adjacent to Existing Residential uses	1
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site			Municipal water lines NOT adjacent to site	1
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**7**			**6**

Site 2


Site 2: Environmental Constraints
Site 2 Boundary
EOEA Absolute Constraints
Wetlands
Steep Slopes > 15%
N
W
E
S
0.05 0.025 0 0.05 0.1
Miles

Site 2

Number of Owners: 6
Number of Parcels: 6
Combined Acreage: 71.54
Number of Parcels >50 Acres: 0
Current Uses: Forested; sand or gravel extraction
% in EOEA Absolute Constraints: 0.00 %
Net Usable Land Area: 71.54 acres; 100%

Major Advantages:

- Approximately 99% of the site is free of any Absolute or Partial Environmental constraints.
- It is located along Route 12, a primary transportation route.
- The sites size may be more attractive to the types of 'soft' industries (office, storage, light manufacturing) applicable to Ashburnham.

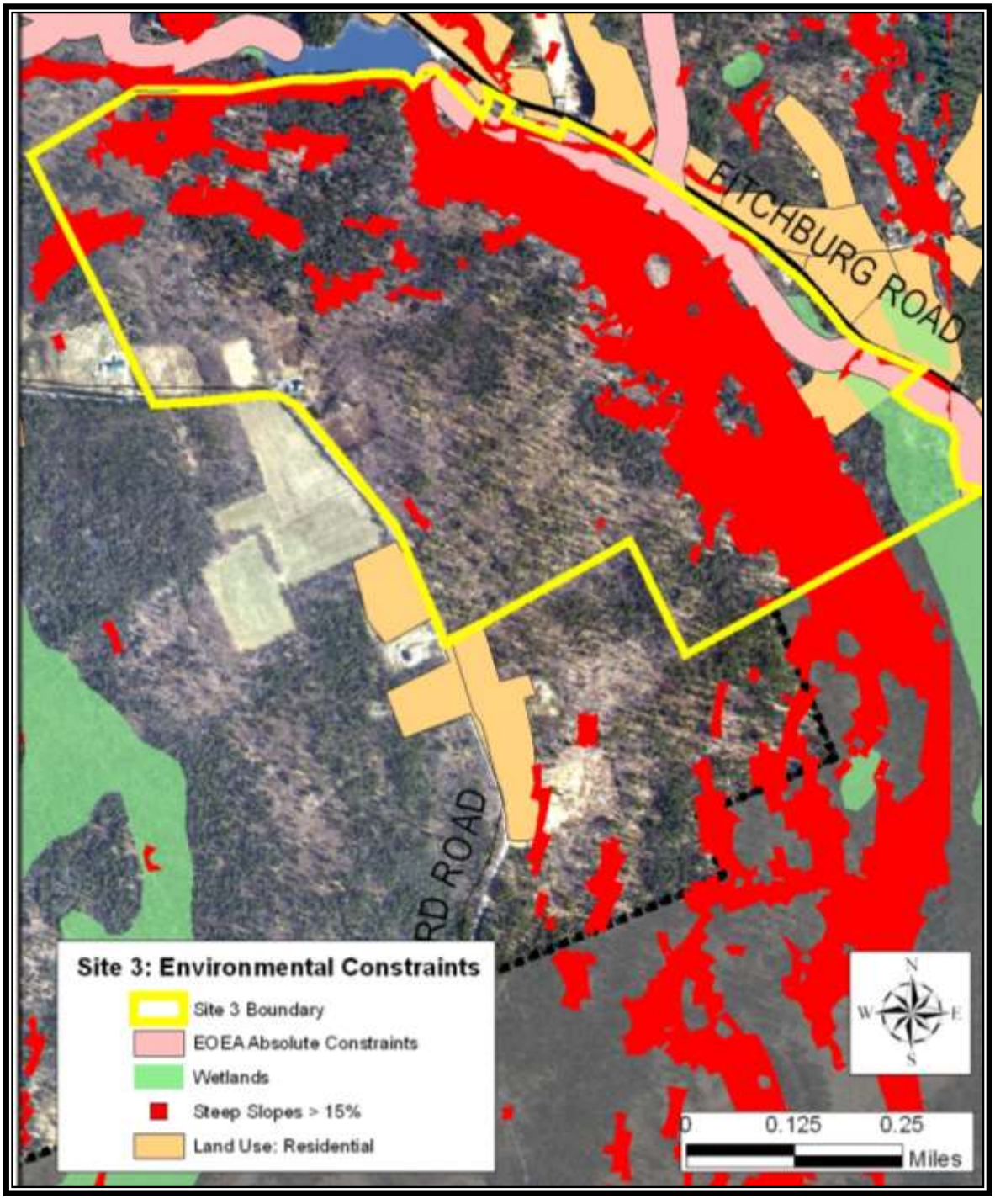
Major Disadvantages:

- There are no existing connections to town water or sewer.
- There may be residential uses on the site or adjacent to the site.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels			Multiple parcels or Multiple Owners	1
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses	1		Not adjacent to Existing Residential uses	1
Site Topography: minimal slopes	1		Site Topography: numerous slopes	
Municipal Water lines adjacent to site			Municipal water lines NOT adjacent to site	1
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**8**			**6**

This site might be expanded by adding a 24 acre parcel formerly owned by G. Gleason, shown as Parcel 1 of Map 14. Though subdivision plan has been submitted none of those acres have been built upon. A current business owner in Town has expressed interest in relocating to this area.

Site 3


FITCHBURG ROAD
RD ROAD
Site 3: Environmental Constraints
Site 3 Boundary
EOEA Absolute Constraints
Wetlands
Steep Slopes > 15%
Land Use: Residential
N
W
E
S
0
0.125
0.25
Miles

Site 3

Number of Owners: 5
Number of Parcels: 5
Combined Acreage: 268.36
Number of Parcels >50 Acres: 3
Current Uses: Forested and some agricultural uses
% in EOEA Absolute Constraints: 5.96 %
Net Usable Land Area: 236.12 acres = 87.99 % of site (does not include steep slope areas)

Major Advantages:

- The site contains many large undeveloped parcels
- It is located along Route 12 (a primary transportation route) on the southern boundary of town—close to Route 2.

Major Disadvantages:

- Compromised frontage—the frontage along Route 12 is within wetlands, the DEP River buffer, and contains a band of steep slope (>15%) that parallels the road.
- The site abuts residential uses.

ADVANTAGES			DISADVANTAGES	
One parcel or 1 owner of multiple parcels	1		Multiple parcels or Multiple Owners	
Site size: > 50 Acres	1		Site size: < 50 Acres	
Adjacency to Existing Residential Uses			Not adjacent to Existing Residential uses	1
Site Topography: minimal slopes			Site Topography: numerous slopes	1
Municipal Water lines adjacent to site	1		Municipal water lines NOT adjacent to site	
Sanitary Sewer lines adjacent to site			Sanitary Sewer NOT lines adjacent to site	1
Re-use of industrial or disturbed site			NOT a Re-use of industrial or disturbed site	1
Less than 25% of site designated as protected habitat	1		Greater than 25% of site designated as protected habitat	
Less than 2 miles to Route 2			Greater than 2 miles to Route 2	1
Less than 10 % site in 100 ft River Buffer	1		Greater than 10 % site in 100 ft River Buffer	
Less than 10% of site in NWI Wetlands	1		Greater than 10% of site in NWI Wetlands	
Presence of Certified Vernal Pools	1			
Less than 10% of site in Conservation (Permanent Protection)	1		Greater than 10% of site in Conservation (Permanent Protection)	
Total	**8**			**5**

Section VI. Funding Sources for Industrial Development

- *Brownfields Redevelopment Access to Capital* (BRAC) encourages private sector lending on contaminated sites throughout the Commonwealth. The program is administered by The Business Development Company and is designed to address lenders concerns that cost overruns incurred during cleanup could impede the borrower's ability to repay a loan and that contaminated land is "impaired collateral" with a reduced value. The program backs private sector loans with environmental insurance to ensure that the cleanup is completed, the loan is repaid and the collateral is restored to its "clean" value. The environmental insurance is used to keep projects running. The borrower's risks are protected through the BRAC Pollution Legal Liability and Cleanup Cost Cap Policies.

- *Brownfields Redevelopment Fund* (BRF) is administered by MassDevelopment and provides low-interest loans and grants for site assessment and cleanup in Economically Distressed Areas (EDAs). EDAs include all Economic Target Areas (ETAs), areas that meet the criteria for ETA designation but have not been formally designated, and former manufactured gas plant sites. Proposed projects must be located in EDAs and must result in significant economic impacts in terms of new jobs or contribution to the economic or physical revitalization of the areas in which they are located and BRF assistance must be necessary to make the project financially feasible.

- *Brownfields Tax Credit* is available to certain taxpayers in EDAs who commence and diligently pursue a response action if they achieve and maintain a permanent solution or remedy operation status in compliance with M.G.L. Chapter 21E and the Massachusetts Contingency Plan (MCP). If the taxpayer uses an Activity and Use Limitation (AUL) to achieve the permanent solution or remedy operation status, the tax credit is 25% of the net "response costs" as that term is defined in c. 21E and the MCP. If an AUL is not used, the tax credit is 50%. The tax credit can be lost if the taxpayer fails to maintain the permanent solution or remedy operation status prior to sale of the property or termination of the lease.

- *Economic Development Incentive Program* (EDIP) created the Economic Assistance Coordinating Council (EACC). The EACC is responsible for creating a list of ETAs based on three or more contiguous census tracts in one or more municipalities meeting one of nine statutory criteria for economic need. The Town of Ashburnham is already an ETA. Within each ETA, a community can designate a particular area as an Economic Opportunity Area (EOA) if it meets one of four statutory criteria. The EACC also reviews Certified Projects, which are site specific funding appeals for businesses moving to or expanding in an EOA. Funding may include:
  - 5% State Investment Tax Credit for qualifying tangible, depreciable investments
  - 10% Abandoned Building Tax Deduction for costs associated with renovating an abandoned building (building must be at least 75% vacant for previous two years)
  - A municipal tax incentive – Special Tax Assessment or Tax Increment Financing (TIF) that does allow for funding infrastructure improvements.

- *Tax-exempt Bond Financing Programs* provide manufacturers, non-profit institutions, long-term care facilities and environmental enterprises with a cost-effective method to finance capital expansion projects, new equipment purchases and facility expansion projects. Taxable bonds offer borrowers flexibility in rates and terms. Since there is no limit to the bond size, the program is well suited to major industrial and commercial real estate projects, particularly for companies that can no longer gain access to tax-exempt financing.

- *Equipment Financing Programs* provide manufacturers, non-profit institutions and environmental enterprises with a low-cost alternative for financing $300,000 or more in equipment needs. The Equipment Loan Program caters to manufacturers seeking an affordable way to finance between $50,000 and $300,000 in new equipment. Additionally, businesses that finance the purchase of new equipment can now access funds to train employees to operate the equipment through the Equipment Training Loan Fund. The Debt & Equity Financing Program provides subordinated and equity investing for real estate projects, leveraged buyouts, working capital, and equipment purchases.

- *Emerging Technology Fund* provides loans for tenant build-out, construction or expansion of facilities and equipment purchases for up to $1.5 million or 50% of aggregate debt.

- *Export Finance Programs* are designed to enhance the overall scope of export activities in Massachusetts while helping exporters expand and compete in the global market.

- *Pre-development Assistance Program* awards funds to projects meeting certain criteria including soundness of concept, potential economic benefit and location in one of Massachusetts' Economic Target Areas.

- *Capital Access Program* is available to Massachusetts companies with annual sales of less than $5 million that have borrowing needs of up to $500,000.

- *Community Capital Fund* offers flexible debt financing for businesses located in eligible communities. Loans may be used for the purchase of equipment, acquisition of real estate, new construction, working capital and refinancing.

- *Venture Capital* makes new and expanding technology-based companies eligible for assistance (debt investment or loan) that provides a magnet to attract private risk or venture capital investments in the early stages of a firm's development. Technical assistance to first-time entrepreneurs attempting to start a business is also available.

- *Research & Development Tax Credit* allows for incremental increases in expenditures for both qualified and basic research. The credit is equal to 10% of the excess of the Massachusetts qualified research expenses and 15% of basic research payments in excess of a base amount. The credit may offset 100% of the first $25,000 of corporate excise tax liability and 75% of tax in excess of $25,000.

- *Investment Tax Credit* has created a state 3% Investment Tax Credit for manufacturers on all tangible, depreciable property.

- *Single Sales Factor* changes the apportionment formula for the state's corporate excise tax as it applies to defense companies and manufacturing companies from a three part formula that considers a company's sales, payroll, and property, to a formula that considers only sales.

- *CDBG's Economic Development Fund (EDF)*. The EDF finances projects and programs that create and/or retain jobs, improve the local and/or regional tax base, or otherwise enhance the quality of life in the community. The program is offered to local communities for industrial, commercial, service, real estates, and mixed-use projects. Applicants may apply for a wide range of eligible activities supporting economic development, including infrastructure and public facilities projects in support of economic development.

- *District Improvement Financing, DIF (Chapter 40Q; 402 CMR 3.00)*. DIF is a municipal financing alternative and economic development tool that is available to all cities and towns in MA. DIF enables municipalities to finance public works, infrastructure and development by pledging future incremental taxes resulting from new growth within a designated area to service financing obligations. DIF is a true Tax Increment Financing program with significant advantages over the TIF currently available in the EDIP program.

- *Expedited Permitting (Chapter 43D)*. Expediting Permitting is a new economic development tool passed by the State in 2006. The Town must adopt the provisions of MGL Chapter 43D and designate at least one qualifying parcel as a priority development site. Then the Town must amend local rules, regulations, and bylaws to ensure a 180-day turnaround on permitting decisions for the designated site. Benefits to the Town are help in encouraging economic/industrial development and job creation, grants available for professional staffing assistance, local governmental reorganization and consulting services. The State will provide aggressive online marketing and promotion of locally-designated priority development sites.

- *Chapter 40T, Special District Finance*. Although Chapter 40T is only pending legislation at this time, the Town should track its adoption. If passed, and as adopted as a local option, Development Zones (designated sections of a town or city benefiting and paying for the improvements) established under Chapter 40T would provide both local communities and property owners with more flexibility in financing a wide range of public infrastructure improvements. Such zones would serve much of the same function as traditional betterment districts. In both, the cost of improvements such as new roads and sewers are assessed against the property receiving benefits as distinguished from the community at large.

  Chapter 40T offers several key advantages. First, the Development Zone is a voluntary initiative by the property owners that benefit from and pay for the improvements. Second, the project can be financed by bonds from the Massachusetts Development Finance Agency or a Local Improvement District. Third, the property owners may pay over a term as long as 35 years as opposed to 20. Exactly what improvements will be financed, and the method of assessing the property owners must be spelled out in a required Improvement Plan, reviewed at a public hearing and approved by the municipality. Development Zones could be used to finance infrastructure for new residential and commercial development as well as existing neighborhoods with Title V septic or other problems.

Section VII. Town-wide Challenges and Opportunities

Challenges

Aside from constraints associated with the individual existing and proposed industrial sites, there are considerable challenges with both the Town and the region in which Ashburnham sits. While some of these challenges have simple, though costly, remedies, other issues cannot be fixed within Town Hall, instead requiring a regional approach to mollify regional issues.

Capital Improvement Projects

Most of the Town's infrastructure is understandably located in South Ashburnham nearest Rte. 2 and traditional industrial development along the corridor. Consequently, the Town's most dense development sits around and south of the town center along Rte. 101, including Cushing Academy, not far from Gardner. Although municipal water and sewer pipes, cable and internet lines and access to Rte. 2 and Gardner all sit in and service South Ashburnham, these services are built out, and substandard or unsatisfactory for considerable industrial development.

A new 110-unit residential project is expected to place the current water and sewer system at capacity, leaving no room for industrial development that utilizes municipal sewer and water. Increasing water and sewer facilities in town would be a considerable fiscal burden that the Town, already grappling for money to construct a public safety facility, may be hard-pressed to shoulder. It will be extremely important for the Town to explore the alternative financing options lists in Section VI of this Report. In this manner the Town may achieve significant additional benefits through infrastructure development that meets the needs of potential industrial, commercial and residential users.

Typical industrial development, as well as any competitive business use, today often expects high-speed internet, cable and phone service. Comcast recently upgraded its telecommunication fiber optic lines to provide high-speed internet to some parts of town – again, only in South Ashburnham where it was profitable to do so based on density – but most addresses must rely on satellite hook-up for these services, an option whose erratic connection and variable speed make it less than ideal compared to the fiber optic option.

Finally and perhaps most detrimental to any initial consideration to invest in Ashburnham, the roads that connect the town to Rte. 2 and other nearby communities seem unsuitable to accommodate traffic generated by industrial uses. Even the most suitable roads – generally Rtes. 101 and 12 – narrowly wind through rural residential areas to connect to more suitable avenues like Rte. 140 in Gardner, a four-lane highway with heavy, high-speed traffic in mind. Some industrial sites under consideration in this report fail to enjoy road frontage on even these industrially substandard highways, relying on traffic to maneuver along even more narrow, more winding residential streets.

Market Threats

Although the capital improvement projects listed above provide daunting challenges to industrial development, the Town could fund infrastructure remedies if it so chose. More threatening to industrial development in the Town is the ability of other communities to accommodate a limited regional industrial market, because there is no financing option to remedy these market forces. Out of six nearby industrial parks along Rte. 2 providing 509 acres, only 210 of those acres have been developed, leaving nearly 300 acres for future industrial development. In the North Central Massachusetts regional extending from Ayer to Orange, there are 850 acres available for industrial development, 250 acres available in Devens, MA, near Interstate 495 alone. These vacancy rates provide more than adequate areas for industry to develop, and trends show that most industries, particularly plastics and manufacturing, develop first closest to I-495 and Boston, the regional commercial hub.

To make the situation more tenuous, Ashburnham sits in one of the most depressed regions in the Commonwealth. As industry began to move south from the Rust Belt and eventually overseas, traditional economic centers like Fitchburg and Gardner have experienced overwhelming distress, most recently with the closure of General Electric's Power System's plant. Once the home of paper fine furniture production, these traditional economic centers along Rte. 2 and at the terminus of an MBTA commuter rail line seem most apt to accommodate any industry that decides to locate in the area, ignoring more economically challenging communities like Ashburnham.

Town-wide Opportunities

Although there are several general disadvantages faced by the Town, there are as many, if not more, unique advantages that other nearby communities cannot match. Although its location and structural challenges limit industrial potential in some ways, these factors may also be understood as strategic assets for other means of economic development.

First and foremost, the community boasts a private and acclaimed academic institution. Cushing Academy is a rare and fruitful resource for the region, commanding an enrollment around 450 students with 85% of those students living on campus at a cost of nearly $40,000 annually. The Academy should serve as a valuable partner in public-private endeavors that facilitate commercial and industrial growth near the Town center campus and as a partner in capital projects. This Report will discuss those possibilities in greater detail as recommendations, but the tenet of Cushing as a partner is a critical opportunity than could be applied to remedy several conditions.

One of Ashburnham's greatest challenges to fully developing many of its existing industrial sites is the amount of absolute constraints and otherwise protected land on available properties. While these constraints and protections are limitations to industrial development, they should not be considered restrictions in general. The community's natural amenities and scenery, including twenty lakes, countless woods and a proposed rail-trail, are truly breathtaking and serene. Similarly, despite their marginal ability to accommodate industrial traffic, the community's

wooded, windy roads fit well with its niche as a rustic escape. These aspects should be celebrated, not shunned.

These elements are more important when coupled with regional development patterns. As traditional economic centers, Gardner and Fitchburg exhibit an urban scale and hard landscape. Meanwhile, Ashburnham sits as a pastoral refuge less than a fifteen-minute drive from both Fitchburg's commuter rail station and downtown Gardner. Given these juxtaposed landscapes, Ashburnham's natural advantages appear all the more evident.

Beyond strictly industrial growth, there are opportunities to grow the local economy generally. As stated earlier, a permitted 110-unit residential project will place existing water and sewer service near capacity in coming years, placing a considerable limitation on further industrial and general development. Despite this challenge, the increased residential population provides an opportunity to create a service industry very close to the project site. The reliable consumer base is magnified when one considers its proximity to Oakmont Regional High School, another potential audience of consumers who could serve as a base for economic development in the restaurant and service sector. Not only would economic development in the area provide business owners with a profitable environment, but the Town would enjoy increased tax revenue and would provide residents and students with new employment opportunities.

As another means of general economic development, the Town could benefit from considerable investment in nearby communities by providing residential opportunities for employees new to the area. When General Electric closed its downtown Fitchburg plant, the City lost 600 jobs and $30 million in tax revenue. In response, state and federal authorities have issued $22 million in grants and loans to support an urban renewal program aiming to bring 800 new jobs to the 224-acre downtown riverfront. In line with this investment, the MBTA has flirted with increasing service on the Fitchburg line, further adding to the City's cachet. This investment in the sister city offers Ashburnham an opportunity to take advantage of its neighbor's good fortune. Left to the market, summer vacationers in a seasonal community whose summer population doubles may find it lucrative to sell their lakeside or wooded homes to year-round residents recently employed down the road. Increased residential development should in turn encourage increased commercial growth in the service sectors.

Finally, the Town's inclusive industrial zoning bylaw serves as a favorable and unique piece to the local development puzzle. Unlike other industrial bylaws and ordinances that prescribe specific uses, dimensional requirements and restrictions, Ashburnham's language liberally allows for a variety of uses – from retail to warehousing, manufacturing to multi-family – with few concerns for restrictions. This inclusive aspect allows developers some ease with permitting and variance petitions if they wish to build a use not typically considered suitable for an industrial zone and saves community leaders time and political headaches by not requiring zoning amendments with two-thirds approval at town meeting.

Because of Ashburnham's relatively liberal inclusionary by-law other non-conventional options such as small Live/Work units could be explored. Such units represent a potential wave-of-the-future as future requirements lead families to seek residential/employment opportunities that reduce commuter time and costs and allow for a less automobile dependent lifestyle.

Eco-Industrial Parks

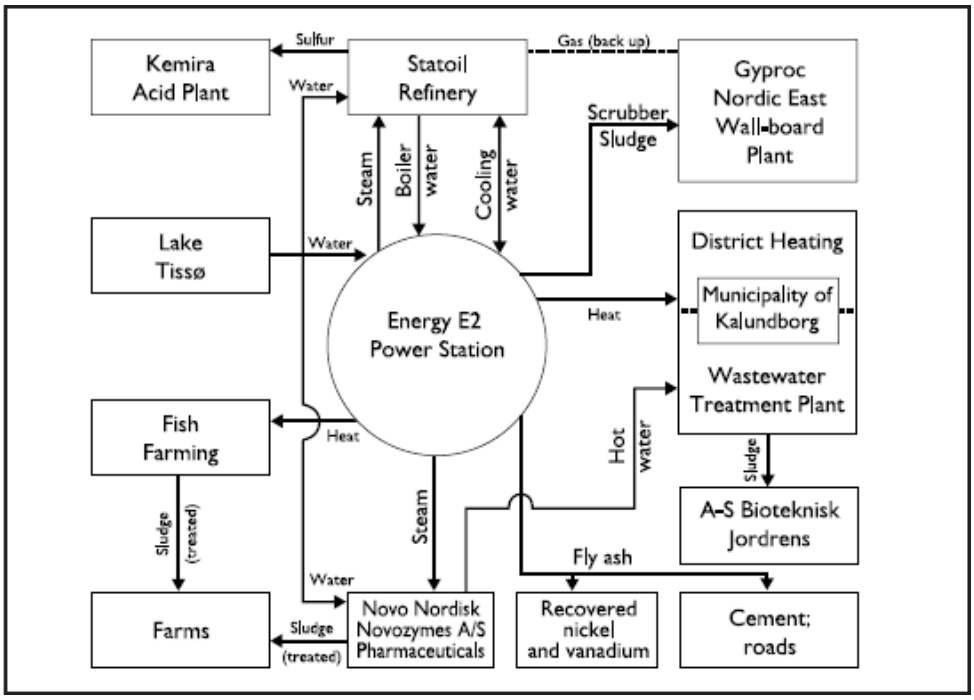
Approaching this topic, the studio group considered eco-industrial parks (EIPs) as a method to achieve industrial development in line with the Town's well-crafted and unique ecological merits and its municipally owned and operated power plant. Based on the examples gathered below, we believe that EIPs remain a viable but challenging alternative for the community to pursue.

Since President Clinton formed the President's Council for Sustainable Development in 1993, eco-industrial parks (EIPs) have emerged across the country, signaling a national appreciation for protection of limited resources and an inappropriate linear systems of production and waste. Using the Brundtland Commission's definition of sustainability – development that meets the needs of the present without compromising the ability of future generations to meet their own needs – the Council agreed that an eco-industrial park is characterized by closely cooperating manufacturing and service businesses that work together to improve their environmental and economic performance by reducing waste and increasing resource efficiency. Firms coordinate activities to increase efficient use of raw materials, reduce outputs of waste, conserve energy and water resources, and reduce transportation requirements, translating into economic gains for the businesses while the local community benefits from resulting improvements in its environment and from creation of new jobs.

- Kalundborg, Denmark

The archetype for eco-industrial development occurs in the small town of Kalundborg, Denmark. Kalundborg's industrial network behaves very much like an ecological food web, where organisms consume each other's waste materials and energy, forming bonds of interdependence. The Kalundborg eco-industrial system includes six core partners: a 1,500 megawatt power plant, an oil refinery, a plasterboard manufacturer, a pharmaceutical company, a bioremediation plant, and the City of Kalundborg. *Figure 1* below outlines the major flows of materials and energy that drive the industrial symbiosis at Kalundborg.

Figure 1: Industrial symbiosis at Kalundborg, Denmark



- Burlington, VT

The Burlington model, Intervale Center, started in the 1970s with a wood-burning power plant and a local entrepreneur attracted to the potential of heating his greenhouse with the plant's waste heat. Along the same lines or waste reuse, Intervale Center features an urban composting project where the city's yard and food wastes mix with milky wastewater from the Ben & Jerry's ice cream plant and cooks into mountains of fertilizer. This operation saves the county hundreds of thousands of dollars a year in landfill costs. The compost is sold to gardeners and landscapers and is plowed into Intervale's fields to revive depleted farmland. Every few years the compost project is picked up and moved down the valley, leaving behind a fertilized clearing that forms the basis for a new farm. Community gardens and cooperatively owned farms dot the area, offering shares to the public for fresh seasonal produce.

As of a 1998 report, Intervale Center's 10-acre expansion adjacent to the wood-burning power plant was still in formative stages, but the planning behind its development was precise and noteworthy. One report points to the EIP's potential to blend three general categories: energy, water and materials. In the Burlington EIP, resource sharing through energy water use and reuse will play a major role in determining the EIP's success. With power plant as one of the principal anchor facilities, the waste heat generated in the production of electricity represents a potentially valuable resource. The resulting steam and hot water can be used to heat auxiliary facilities, such as a greenhouse, aquaculture facility, or insectary. Burlington is also the home of Living Technologies, innovative designers of wastewater treatment facilities using plants and microbes to treat organic wastewater. This connection has helped to make water and reuse a second major focus of the Burlington EIP. A wastewater treatment facility could be designed to accept water from the power plant, incubator industries, or other local manufacturers and treat it for use in the several of the facilities on-site.

The economic climate of the Intervale Park is unique and progressive. A waste wood depot accepts scraps from an assortment of local businesses and divides the donations for use in the power plant and in a composting facility. The compost project accepts ice cream slurry from Ben and Jerry's and yard and food waste from local residents and shop owners, specifically designing compost piles to handle this particular input stream. Fly ash from the power plant is transferred to a cement manufacturing facility for use as input to its manufacturing process, while fertilizer companies have devised a method to use recycled cement kiln dust as a biding agent in fertilizer production.

- Londonderry, NH

This park's use of ecological covenants – a sustainable twist on a commonly used vehicle for privately regulating business and industrial parks – is used often to describe criteria for its success. The Town of Londonderry and the EIP Advisory Board made a conscious decision to utilize covenants as an enforcement tool for assuring that the park is developed as an ecological industrial park. The use of existing tools and existing zoning is designed to make the park easily replicable for use as a model.

The covenants mandate that all EIP tenants:

- develop an Environmental Management System;
- track resource use;
- set environmental performance goals;
- perform third party ecological audits; and
- report progress to the Park Association (a self management board to be composed of park tenants, the developer, town, citizen and environmental representatives).

Practices that will be incorporated into the covenants affect all media, including:

- standards for decreasing the business' impact on air, water, and soil;
- ecological auditing for continuous environmental improvement;
- environmental goal setting;
- input and output management and sharing;
- inter-firm collaboration;
- energy efficiency;
- water conservation;
- product stewardship;
- environmental reporting;
- stakeholder accountability;
- facility design and material use;
- Design For the Environment; and
- restorative activities.

The Park management structure enforces adherence to the legally binding covenants to assure continued compliance in fulfilling the mission of the EIP and protecting the site from environmental degradation. With the park under a Purchase and Sale agreement with a private sector developer the advisory board has required the developer as a condition of the P&S to review the Town's draft covenants and provide new covenants that are both ecologically and

economically efficient and acceptable to the advisory board. It is hoped that this 'market' testing should make for a more viable EIP concept.

One tenant of the Park, a plastics recycling company, purchases waste plastic from Stonyfield Farms Yogurt, a firm located next to the Park. The Park has also attracted AES, a power company that will develop a 720 megawatt combined cycle natural gas power plant for the site and will use treated wastewater pumped from the City of Manchester's Waste Water Treatment Facility. In order to meet the Park's environmental standards, which are overseen by a citizen committee, the company has revolutionized environmental design of power plants.

- Devens, MA

Often considered a progressive and successful planning story in a state with too few of them, Devens is the latest and arguably greatest New England EIP. Developed with funding from MassDevelopment, the Commonwealth's quasi-public financing agency for its largest projects, the community uniquely developed in the late 1990s when the US Army closed its New England headquarters at Fort Devens, a campus composed from portions of the communities of Ayer, Harvard and Shirley. Planners, financiers and state politicians saw the 4,000-acre plot as an opportunity to create an award-winning, nationally acclaimed community.

The EIP features at Devens include more administrative conditions than applied in the New Londonderry and Burlington examples. Instead of using strict by-product reuse, businesses at Devens currently utilize the EcoStar Program to pursue collective bargaining to contract environmentally sensitive producers at competitive pricing to meet sustainable ends. EcoStar is an environmental branding and recognition program designed for local business participation. Members of EcoStar must adhere to ten out of twenty-five environmental standards and choose from the remaining measures as they pertain to individual business uses in order to gain greater leverage.

As an example, Parker-Hannifin Corporation's waste oil is used to heat a greenhouse, and bio-processing waste from Novo Nordisk is used in landscaping to make the grass greener. A comprehensive solid waste management and recycling program is under development for Devens companies, residents and schools. Another business owner commented, "Every time something goes into the waste stream you have to pay to take it away." All but 2 percent of Southern Container's product ends up being recycled into more product and the company recycles 100 percent of its waste. "As a supplier, if we don't help customers reduce waste to levels they need, someone else will."

Beyond EIPs, Devens exhibits other noteworthy environmental considerations. Its soccer fields use a composition of wood chips, yard waste, gelatin and other bio-solids that absorb and retain water. Savings on water and chemicals have been dramatic. In 2001, before the program began, Devens used three million gallons of water and spent $75,000 for chemical fertilizer, and the turf was seeded three or four times a season. Now, water use is down to 600,000 gallons and spending on fertilizer was $28,000 in 2005. Another savings: while chemical fertilization makes grass grow too fast, bio-compost creates a robust but slower-growing grass, requiring less staff time and energy to maintain.

Section VIII. Recommendations

Short-term Goals

Many of the recommended short-term goals speak to the community's strategic advantages over nearby communities as ways to ameliorate the several challenges presented earlier in this report.

- Extend Town Center

As stated earlier, Cushing Academy could serve as a valuable partner for the community to expand its economic development. Cushing students, faculty and parents all provide some level of consumer potential, especially the boarding school's 250 on-campus residents. Put simply, students need places to eat, shop and socialize and the Academy's often wealthy student body is a veritable golden egg for business owners.

The area directly across Rte. 101 from campus contains the Town's Department of Public Works (DPW) facility and a handful of industrial uses set further from the road. Town officials have considered relocating the DPW facility, leaving a high-traffic, well-fronted plot for development. Developing this area for mixed use would go far to accommodate student-driven business as well as the needs of parents (perhaps an inn) and faculty (a bookstore, restaurant and coffee shop).

The DPW barn and other areas in the town center are designated under Village Center and industrial zoning. As mentioned before, the Town's inclusive industrial zoning bylaw allows for a range of uses, further accommodating redevelopment geared towards the Academy.

Lastly, Town officials have considered relocating Rte. 101 to intersect seamlessly with Rte. 12 instead of the double T-intersection currently in place slowing traffic and creating congestion. Although relocating the highway would add to the Town's costly wish list of capital improvement projects, such efforts would improve pedestrian access between the Academy and the area while opening new areas of the town center for further development.

- Market Community as a Recreational Escape

The Town should embrace its natural amenities not as development constraints but as economic opportunities. With this in mind, the community should actively market itself across the state, particularly in urbanized areas, as a nearby protected refuge with easy access from both Rte. 2 and Fitchburg's commuter rail station.

Much of the impetus for this investment falls on private business owners. The Town's funds are currently limited, and it would be hard to imagine the community spending thousands of dollars to bring people to a community without the requisite tourism support of lodging, dining and designated attractions. The North Central Massachusetts Chamber of Commerce may serve as an appropriate leader for a regional campaign with Ashburnham as its outdoor recreational focal point.

Although the Town is not in a position to directly market itself, it should lay the framework to attract the business community, re-zoning strategically profitable areas like the DPW barn to generate the greatest use from its limited geographic and financial resources. Also, taking steps to alleviate development restrictions like limited sewer and water service, internet and road access would entice business to re-consider the area.

- Encourage General Development

The Town should encourage general development with the intent of increasing commercial uses. There are both direct and indirect approaches to this recommendation.

Directly, the Town should re-zone areas between the permitted 110-unit housing development and Oakmont Regional High School for commercial or mixed use. These two anchors provide a reliable and attractive consumer base for business owners looking to start-up or relocate to the area. Also, new business could provide new jobs for residents and students alike.

Indirectly, the Town should consider increasing residential opportunities to take advantage of considerable and rare investments in Fitchburg's economy and to position itself for rebounds in Gardner. Despite the strain residential development exacts on municipal services, there is a causal development relationship the Town should consider: increased residential development as could induce commercial development in the service sector, leading to greater tax revenue and further economic development.

- Re-name Industrial Zone

In order to better market its inclusive industrial zone, the Town should re-name this district designation to reflect the many options available to developers. Since the district accommodates retail, office, manufacturing, warehousing, multi-family housing and assorted other uses, a title more fitting for the myriad of uses seems appropriate, perhaps something to the tune of "multi-use" or "general purpose" zones. Hopefully a steering committee can deliver more attractive titles to complement the attractive district.

Long-term Visions

- Seize the Regional Arena

Based on conversations with local planners, business leaders and consultants from the area, a regional leadership vacuum affects North Central Massachusetts. This absence of direction provides an opportunity for Ashburnham to steer regional growth discussions to fit its needs and interests. Although it may seem inappropriate for one of the smaller communities to enjoy such large influence in the competitive political arena, the lack of a more qualified and interested party opens the door to Ashburnham to take the lead for its own considerations before someone else assumes the role and the authority of leadership.

- Evaluate Capital Improvement Projects

The Town's need for improved infrastructure appears evident, but the cost of those projects limits their applicability in the near future. Instead, the Town should consider the costs and benefits of expanding any infrastructure and follow through strategically to achieve its desired outcomes. For instance, if the community wants to limit development to South Ashburnham or chooses to grow at a certain rate, it should invest only in that area or only as much as it wants to support development with the understanding that continued demand for growth will require upgrades and incremental upgrades are often more costly.

Expanded capital upgrades may offer some opportunity to partner with Cushing. Both the community and the school could consider pursuing a wireless communication tower to provide high-speed internet and improved cellular phone service to at least South Ashburnham and the town center. Although the town's variable and daunting slopes may limit service, the potential benefits of this infrastructure seem worth the initial investigation.

The Town must take advantage of the many potential sources of State and private sector funding to support of any infrastructure developments that seem strategically important to its goals. Section VI of this Report list 19 State programs that can be looked to as potential sources of support and it is certain that as the State continues to create incentives for smart growth that others will become available. Ashburnham should make every effort to take advantage of those opportunities to build in directions that it sees as consistent with its goals.

- Leverage Developers to Meet Eco-Sensitive Conditions

The community should not compromise its well-preserved landscapes and conservation areas for development. Instead there are a handful of opportunities to compel developers to preserve certain natural features in exchange for municipal accommodations. Based on the site assessment described earlier in this report, Site G does not enjoy unmitigated road frontage, limited by absolute constraints where such frontage does exist and blocked by abutting properties, including the Town, elsewhere. Depending on the developer's interest in one of the more favorable sites currently available for industrial development, the Town could grant an easement or sell the property outright in return for a development buffer along the proposed rail-trail with a bio-retention swale or other environmental remediation feature to compensate for the development.

- Consider Regional Eco-Industrial Parks

A municipal eco-industrial park would not succeed in Ashburnham. First, development in the region is sufficiently difficult to attract without adding further repelling restrictions to the magnet. Even if the existing and proposed sites were developed to capacity, it is hard to imagine that those industries alone could sustain the complex operation.

Instead, Ashburnham could lead a regional discussion regarding the feasibility of an inter-municipal business council with the same sustainable objectives of the examples presented in this report. A regional eco-industrial park could take advantage of the municipal power plant in

Ashburnham – a critical factor to any EIP – and the various wastes created by the several industrial uses immediately along Rte. 2 in communities like Fitchburg and Gardner.

The challenges associated with this proposal primarily involve funding. While Burlington's EIP was an organic pursuit built from farmers looking to apply cost-effective measures to their practice, Londonderry benefited from investment as the headquarters of Stonyfield Farm Creamery, and Devens enjoyed a unique planning situation to create a model community in a sea of contemporary sprawl and millions of dollars invested from federal and state coffers and private sources. If the state's interest in Fitchburg continues and swells to the region in general, it could compel MassDevelopment to pursue a second model development. If not, tools like the EcoStar program are in place to adapt into a fitting model for the area and its resources.

Another challenge to successful EIPs is the condition of business proximity. All three New England EIPs practice in industrial parks of sorts – Devens could be considered a very large industrial park – and all three profit from brief distances between involved businesses due to transportation costs and facilitated negotiations with contractors looking to operate in a dense area.

Despite these challenges, EIPs and the programs they further would fit with the Town's vision for economic development and conservation while instituting a model ecological and economic process to attract business to the region. If not necessarily reserved to the Town's charge, Town officials should push the region and state to consider its benefits for regional economic rebound.

Look to the Creative Economy

The creative economic activities that result from interest in music, art, theater, local crafts and other creative endeavors may present a particularly important opportunity for Ashburnham. Numerous recent studies have shown how dynamic a sector of the economy this can be. With Ashburnham's other natural assets, its prime location near two larger urban centers, and its accessibility it is precisely this sort of economic niche that the Town should look to fill.

Again, Cushing Academic represents a good base from which to build, and summer arts camps, music and theater programs could be a good start. Specifically marketing its assets to the artistic community to build a viable creative sector should be considered. Many arts and crafts operations such as pottery kilns, glass blowing shops, and small wood shops are types of small-scale industrial operations that would fit in well with the Town character.

While further studies of this type would help the Town to identify important strategic opportunity it is important to note that an active group of Town residents can accomplish a great deal by looking to expand upon their economic interests in ways that are consistent with Town character and make use of the extensive set of funding opportunities to complete studies and initial development efforts.

Section IX. Conclusion

At this phase of the assessment, some advantages and disadvantages that the town has for development have been identified. Advantages include: several undeveloped parcels over 50 acres; available labor force; proximity to several state routes. Some disadvantages are: environmental constraints; limited market demand; and, limited infrastructure support.

The Town of Ashburnham has many natural assets, such as the twenty lakes, trails, and mountains. In addition, there are many new developments proposed for the town, including housing developments and a rail trail. There are many opportunities for economic development, especially for niche development (i.e. eco-industrial parks or incubator industries). The strategic location of Ashburnham provides an opportunity to capitalize on the growth of surrounding towns by examining a niche for eco-industrial parks integrated into a greenways network that continues the equilibrium of economic development and environmental stewardship.

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